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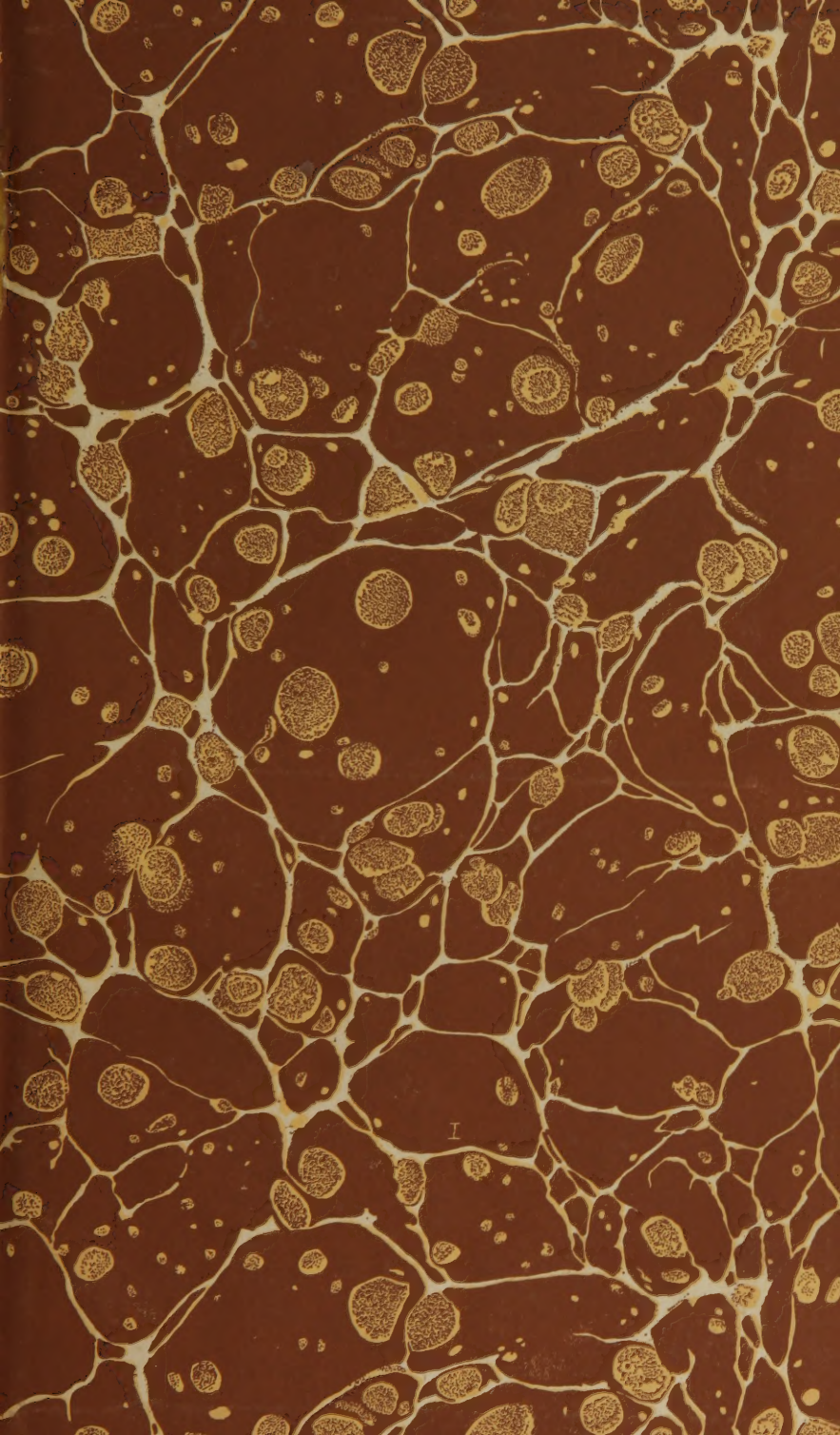
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TREATISE

ON THE

PHYSICAL AND MEDICAL TREATMENT

OF

CHILDREN.

BY WILLIAM P. DEWEES, M. D.,

ADJUNCT PROFESSOR OF MIDWIFERY IN THE UNIVERSITY OF PENNSYLVANIA;
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MEDICAL SOCIETY; LECTURER ON MIDWIFERY,
&c. &c.

FIFTH EDITION, WITH CORRECTIONS, &c.

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Eastern District of Pennsylvania, to wit:—

* L. S. *

BE IT REMEMBERED, that on the sixth day of November, in the fifty-first year of the Independence of the United States of America, A. D. 1826—William P. Dewees, M. D. of the said district, hath deposited in this office the title of a book, the right whereof he claims as author, in the words following, to wit:—

“A Treatise on the Physical and Medical Treatment of Children. By William P. Dewees, M. D., Adjunct Professor of Midwifery in the University of Pennsylvania, Member of the American Philosophical Society, of the Royal Medical Society of Denmark, of the Philadelphia Medical Society, Lecturer on Midwifery, &c. &c. Second Edition, with Corrections, &c.”

In conformity to the Act of the Congress of the United States, entitled, “An Act for the Encouragement of Learning, by securing the Copies of Maps, Charts, and Books, to the Authors and Proprietors of such Copies, during the times therein mentioned”—And also to the Act, entitled, “An Act supplementary to an Act, entitled, ‘An Act for the Encouragement of Learning, by securing the Copies of Maps, Charts, and Books, to the Authors and Proprietors of such Copies, during the times therein mentioned,’ and extending the benefits thereof to the arts of designing, engraving, and etching Historical and other Prints.”

D. CALDWELL,
Clerk of the Eastern District of Pennsylvania.



TO

THOMAS C. JAMES, M.D.

PROFESSOR OF MIDWIFERY

IN THE UNIVERSITY OF PENNSYLVANIA,

THIS WORK

IS MOST RESPECTFULLY, AND AFFECTIONATELY INSCRIBED,

BY HIS FRIEND,

THE AUTHOR.

PHILADELPHIA, {
January, 1833. }



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PREFACE.

WE thought it would be useful, before we treated of the diseases of children, to give a summary of the physical treatment of children. This subject, though deserving of consideration, is almost new in this country. In treating of this important part of education, we have consulted some of the best authorities on the subject, and have also endeavoured to make our own experience useful. By appealing to experience and reason, we have tried to avoid speculation; and have not permitted ourselves to be seduced into the diffuseness of Jean Jacques Rousseau, nor to rest contented with the limited, though generally correct views of Faust. We have endeavoured to condense most of the important points, which reason has dictated, or experience has sanctioned, within as narrow a compass as appeared consistent with perspicuity.

The physical treatment of children, in its details, is almost infinitely diversified; for custom, prejudice, and speculation, have imposed regulations, which, in their extent, are neither sanctioned by reason nor experience. The first declares its influence, by the perpetuation of restraints upon the body and limbs of the passive child, by which it is moulded to the form, that caprice, or hypothesis judges best for its future health, or proportions—hence, the continuance of the unnatural practice of “swaddling.”

We cannot but regard as one of the greatest improvements in modern physical education, the now almost universal abandonment of swathes, and stays. This unnatural practice, will doubtless, be hereafter looked upon as “a tale of the olden time,” when fable usurped the place of truth; for we are not certain, even at this moment it will obtain belief, that, in Great Britain, half a century ago, this custom was almost universal. Dr. Bu-

chan informs us, (*Advice to Mothers*, p. 108,) that he was very instrumental in abolishing this cruel, and absurd practice. His Inaugural Dissertation was upon this subject; and when he recommended a loose and easy dress for children newly born, he had not only to contend against the force of custom, and the stubbornness of prejudice, but also against the opinion of the "Medical Faculty of the University of Edinburgh," itself.

It may not be amiss to state, for the information of those who have heard of "swaddling," but who are ignorant of its meaning, that this practice consists in entirely depriving the child of the use of its limbs, by enveloping them in an endless length of bandage, so as to make them not unaptly resemble billets of wood. By this means, the skin was sometimes excoriated; the flesh compressed almost to gangrene; the circulation nearly arrested, and the child left without the slightest power of motion.

Its little waist was surrounded by stays of such stiffness, and such strictness of application as to forbid flexion, either backward or forward, or, indeed, motion of any kind. Its head was compressed into such a form as the fancy of the midwife might suggest; and its shape maintained, by properly adjusted pressure, by means of bandages. In fact, the talents of the midwife were estimated at this time, by her dexterity in the application of swathes, rather than by her professional acquirements. When the child was completely dressed in its bandages, it but too nearly resembled the form of an Egyptian mummy; and, like its prototype, might, it is said, have been safely thrown any where, as the swathing would protect it from being injured by such rudeness. In a word, it had no resemblance to any thing living; its frequent but unavailing cries alone determined it to be human.

The second shows its influence, in the almost entire conformity to usage, though a more rational mode is constantly presenting itself for imitation;—hence, the continuance of customs, however pernicious and preposterous, by foreigners, among those who are more rational in their habits and manners.

The third, from preconceived notions, prescribes rules, for that which it would be desirable to attain, rather than that which is practicable; hence, the many European notions of Jean Jacques Rousseau. It would, therefore, seem, that this important part of education consists rather in usage, than in regulations based upon reason and experience; for, were these to be the

foundation, much less difference would be found in the education of children than at present exists.

The education we are now considering, consists in the development of the physical and moral powers of man; consequently, that scheme which does this in the most perfect manner, must be the best—but much discrepancy prevails, in what the scheme should consist. We make no pretensions to originality; nor shall we boast of any superiority, in our present endeavour, over the systems which have gone before us; we merely hope, that the result of long observation, and experience, will not be altogether unavailing.

It will be seen, by the arrangement of our subject, that it is our opinion, that the physical treatment of children should begin, as far as may be practicable, with the earliest formation of the embryo: it will, therefore, necessarily involve the conduct of the female even before her marriage, as well as during the period of pregnancy. It will also be obvious, that the various contingencies which may affect her, as well in health, as in disease, must also exert an influence upon the foetus. To the mother, then, we have addressed a few directions, that she may be enabled to contribute to the healthful stamina of her child, about to be born.

We would not, however, positively say, with some, that every man is nothing more nor less, than that which his mother has made him; nor that to her care, alone, he is indebted for a vigorous constitution; nor to her neglect that he must solely attribute a feeble frame: yet we dare advance, that very much depends on her either to ensure the one, or prevent the other.

To ensure the first of these objects, and to prevent the other, it would seem evident that the woman herself must possess health; and, at all times to preserve this, is not only highly desirable, but it becomes an imperious duty, if she have a suspicion she is about to become a mother; for now she has committed to her trust the future welfare of a being, to whom she should be united by the most tender and endearing of ties.

Let her, then, in early life convince herself, that an awful responsibility is attached to the title of "mother;" and that, if she enter into the holy state of marriage with heedless haste; and without weighing the nature and importance of the duties she

voluntarily imposes on herself, she will but too certainly discharge them without pleasure, if not with reprehensible neglect.

As the influence of the maternal constitution upon the embryo must be admitted, we have thought it proper to suggest, how much a woman owes it to herself, as well as to society, that she enter not into the marriage state while labouring under such disqualifications as will be sure to entail debility, or disease upon her offspring; we have, therefore, directed our first chapter to this object.

In such horror did the ancients hold such marriages, that, under the pretext of serving the public weal, the offspring were often condemned to death, without feeling or remorse.

The cruel and severe laws of Lysurgus, forbade the parent to take charge of his child, or to educate him according to his own mode: it was always submitted to the inspection of a jury of elders, whose decision was final. Should the child be found lively, robust, and well-shaped, it was maintained at the public expense, and had a certain portion of the public wealth assigned it; and from that moment, it became the property of the republic; but if, on the other hand, it were found feeble, deformed, or crippled, it was by the same power, without mercy or hesitation, consigned to death, by throwing it into the Apothetes.

There is no fact better established, than that the stamina* of offspring almost exclusively depends upon the good health of the parents; and that upon the original healthy dispositions of the child will the success of well directed physical education very much depend; for *upon the judicious application of physical agents*, healthy development takes place; and by their misapplication, the soundest stamina may be converted into never-ending debility, or pitiable helplessness.

How important, then, is good conduct, both before and after marriage, to the formation of healthy stamina. And how especially essential and proper, are certain observances of the mother during pregnancy, that she may ensure desirable dispositions to her infant; at least, so far as she is capable of imparting them during that period. And, on the other hand, how reprehensible

* We employ this term in the singular, from usage, and not from the rules of grammar.

is that heedless selfishness of the mother, who, for a momentary gratification, neglects the opportunity of imparting health and vigour to her offspring.

To constitute a mother, in the best sense of the term, much more is required than giving birth to progeny—it requires qualities both rare and estimable; it exacts a patient endurance of fatigue, and anxious solicitude, as well as a submission to privations, which nothing will render supportable, but that love of offspring which a kind Providence has so generally, and so deeply implanted in the female heart. Thus, the toil and danger of child-birth; the fatigue and anxiety of nursing, and the responsibility of education, exclusively for a time devolve upon the female. Can the attempt, then, to diminish the first, to relieve the second, and divide the third, be unacceptable?

Is it not both unfortunate and unjust, that the responsibility and care of early education should so exclusively devolve on the mother? For it is every way sufficiently severe upon her to superintend the concerns of her establishment, if it be an object that these shall be well and economically managed, without the burden and perplexity of educating her children.

It is time, then, that some changes were made, which would tend to the relief of the over-burdened mother; and this can be most profitably done, by the father partaking in this arduous and interesting duty. This would not only contribute to the relief of the mother, but would command a conformity from the child, that would be highly useful, to its future welfare.

Besides, the father, from his education and studies, is, for the most part, better qualified to direct and enforce a proper system of physical education. But, unfortunately, at present, every thing connected with the nursery and education, “is voted a bore,” by the modern fine gentleman; and the physical treatment of his children, is a duty he would feel almost disgraced to perform. Not so felt a Cato, an Augustus, a Henry the Fourth, or a Montaigne: they felt it worthy of their most serious regard.

The table of contents will nearly explain our plan: we have commenced with considerations on marriage; we have given directions for the conduct of the mother during pregnancy, labour, and the month of confinement; pointed out what is proper for

the child during that period; attempted to convince the mother it is her duty to suckle her child; or, in case she cannot, what is the next best course; considered, what is the best method of clothing, dressing, feeding, and exercising the child; explained the nature of our atmosphere; shown in what its purity and its deterioration depend; in a word, we have attempted to determine the influence of physical agents upon the constitution of the being, from its embryo existence, to that state of development, called puberty.

OF

THE PHYSICAL TREATMENT

OF

CHILDREN.

OF
THE PHYSICAL TREATMENT
OF
CHILDREN.

BOOK I.—PART I

CHAPTER I.
OF MARRIAGE.

1. BEFORE we detail the duties of the married woman, either as regards herself, or the treatment of her children, we feel it proper to say a few words upon the subject of marriage, as it must have a strong bearing upon the health of offspring. We shall consider this subject under the following heads:—1st, the most proper period to both sexes for its consummation; 2d, the respective constitutions of the individuals; 3d, their disposition to disease; 4th, their immediate state of health.

SECT. I.—*Period of Life.*

2. It is notorious, that the development of the body is successive, and requires a definite period for its completion; consequently, certain functions cannot be performed, in the best manner, until the body has acquired its full development—this rule applies as well to the female, as to the male. It is also familiar to observation, that when any viscus is prematurely or inordinately urged to action, that it is followed by the imperfection of the product dependent upon the part thus stimulated, as well as entails upon the organ, so exercised, debility if not premature decay.

3. From this it will follow, that too early marriage is never to be advocated; since, it will materially influence the health, and well being, of offspring. This fact is no less conspicuous in the inferior animals, than it is certain in its consequences in man. We would, therefore, not only say, that marriage should not take place until the body is healthily and completely developed, but also that there should have been on the part of the male, the most scrupulous continency, that the great object of marriage, (the propagation of healthy children,) should not be defeated: this cannot be too strongly insisted upon, however little it may be availing. The female is always supposed to be so.

4. It would be difficult to fix rigorously the period by years, at which the body becomes fully expanded: since, original stamina, physical and moral education, climate, mode of life, &c. will have their influence; but we may with much certainty fix it in this climate, at between the twenty-third and twenty-fifth years, for the male; and from the nineteenth to the twenty-first years, for the female.* We are informed by Tacitus, that the ancient Germans never married until the twenty-fourth or twenty-fifth year of their age, and were as continent before its consummation, as the females, to whom they were united; in consequence of which, they acquired a size and strength, that excited the astonishment, of even the Romans.

5. It has frequently excited the surprise, as well as provoked the reproach of foreigners, that the females of this country lose

* The following curious table, constructed by Dr. Granville from an examination of eight hundred and seventy-six cases in lying-in hospitals, &c., is the first ever submitted to females to exhibit their chances of marriage at various ages.

Years of age.	Years of age.	Years of age.
3 at 13	85 at 22	7 at 31
11 at 14	59 at 23	5 at 32
16 at 15	53 at 24	7 at 33
43 at 16	36 at 25	5 at 34
45 at 17	24 at 26	2 at 35
67 at 18	28 at 27	0 at 36
115 at 19	22 at 28	2 at 37
118 at 20	17 at 29	0 at 38
86 at 21	9 at 30	1 at 39

It is a curious fact, that if a woman marry at twenty-one or twenty-two, and is placed under precisely similar circumstances for the following fifteen years, as women at fourteen, fifteen and nineteen, marrying at that age, may be supposed to be under, she will produce the same number of children as the latter would, though the party marry eight years later.

their beauty so early; especially, when compared with the females of Europe, and particularly those of Great Britain. The cause of this hasty decay must be principally sought for in our very early, or rather premature marriages; but we confess that climate has also a certain, though a limited agency. And though we are far from discouraging early marriages, yet we are decidedly opposed to premature ones. By early marriage we would wish to be understood, such as may take place so soon as the body has received its final expansion; and that time, we have just fixed, as a general rule, at nineteen, or a little more, for the female; and twenty-three, and a little upwards, for the male. By premature ones, we mean those which happen before the system has received its ultimate development, be this period when it may;—and this should be the more insisted on, as it would appear from the calculations of Dr. Granville, in the note just referred to, that neither the woman herself nor society lose by a proper delay—so that it is best to do so, both morally and politically.

6. It will readily be seen, that no precise or absolute rules based upon the lapse of years, can be laid down; since the body of both male and female, may be precociously expanded, or may be unusually retarded. In the first instance, the period we have assigned may be anticipated with safety; but in the second, it would be wise to extend it. Thus, oftentimes in India, females become mothers at ten; while in Lapland they rarely give evidence of womanhood until eighteen; consequently, the women of India would be on the wane, did they wait for the limit at which it would be proper for a Lapland woman to marry; and the Lapland woman could not support the contingencies of marriage, did she attempt to regulate it by the usage of India.

7. The evil consequences resulting from precocious unions in this country, are familiar to every body—they are not limited to the diminished vigour, and shortened life of the male; nor to the faded beauty, the blasted health, and the premature old age of the female; but are extended to their unhappy offspring, on whom they have perhaps entailed a diminutive stature, debility of body, and imbecility of mind; or have handed down to them, strong predisposition to consumption, rickets, scrofula, &c. It is therefore of the utmost consequence that parents do not consign their children to inevitable ill health, by consenting, or sometimes by urging them to too early marriages; and on the part of

the children themselves, that they do not yield themselves up to almost inevitable destruction, (especially the female,) by anticipating the eligible moment for marriage consummation.

8. We are, however, strong advocates for early marriages, (agreeably to our definition of them;) we are persuaded of the importance of both their moral and political tendency; and we think they should be encouraged, wherever there is a rational expectation of both these great ends being answered.

9. The consequences of ill-assorted marriages were well known to the ancients, and were strictly forbidden by the Greek legislators; and though things have not proceeded to such length in this country, as to require the interference of the laws, it is nevertheless sufficiently common, to make a caution upon the point proper. Should no attention be paid to compatibility, the obvious and most desirable objects of marriage will be defeated, and one great source of health and longevity destroyed; for it is a fact, no less important than well established, that a well regulated marriage, contributes largely to these two great ends. It is declared by Huffland, that all those who have attained great age, were married even more than once, and generally at a late period of life; and that there is no instance of a bachelor attaining a great age. We may give two remarkable instances of longevity, where marriage was often repeated: one in Thomas Parr, of England, who attained to one hundred and fifty-two years, and was married several times; and the other in De Longville, of France, who lived until he was one hundred and ten years old, and married ten wives; his last, he married in his ninety-ninth year, and she bore him a son when he was in his hundred and first.

10. It seems agreeable to all observation, that better constitutions are perpetuated to offspring by men advanced in life, where the physical powers have been well preserved by moderate and proper use, than by young men who have been prodigal of them; for it is oftentimes better to be old in years, than in constitution.

11. Though we have said that men advanced in life may have healthier offspring than the man who too early tests his prowess, or the one who has been too prodigal of his powers, we are not advocates for the union of old age to blooming youth. On the contrary, we are entirely convinced, that none so completely fulfil their duties to society, as those who unite themselves as soon as the proper development of body, and well established

health, will justify their union. Yet we are equally persuaded of the truth of what we have just observed; namely, that a man advanced in years may have every requisite firmness of constitution, to justify a union; while a young man, who may have a natural feebleness of constitution, a strong predisposition to disease, or its actual existence, or a debility from overtaxed powers, may be altogether ineligible to such a consummation.

SECT. II.—*Of Constitution.*

12. It is not alone sufficient for the best purposes of marriage, that the body has received its final development, either on the part of the male or the female; since all the functions of the body may be disturbed, by either feeble organization, disease, or accident. When, then, the male and female, or either, has suffered in constitution, it is not to be expected they can impart to offspring that which they themselves do not possess. It should, therefore, always be a consideration in a marriage contract, that both parties be of sound health and constitution.

13. We are aware in many instances it may be said, that hale, healthy looking children belong to parents of feeble constitution: but we must be cautious how we admit this as militating against our position; since, such appearances are by no means conclusive of the goodness of health, or the soundness of constitution. We have many times seen children of robust appearance from parents of feeble health; but we do not recollect a single instance, where such children attained an age much beyond manhood—old age was out of the question. Indeed, it would seem, in many instances, that children of such parents most frequently give an early promise of future health; but it is illusory—as it is never or but very rarely realized. In the early part of the lives of the children of whom we are now speaking, a rapid, but morbid development of the body takes place; every function is inordinately performed; and when the constitution is confirmed in appearance by such a display of health, it is but hastening to decay. Let us not then be deceived by such appearances; and when we are choosing for our children, let us select such as give a rational reliance upon the soundness of their constitution.

SECT. III.—*Predisposition to Disease.*

14. There are numerous diseases, or rather a disposition to them, which do not show themselves for many years after birth, or until they are called into action by some exciting cause, either suddenly or gradually applied; such diseases are gout, madness, scrofula, consumption, &c. Those who may inherit such predispositions, may for many years enjoy good health; and may not be led to suspect a cause to be lurking in their systems, which, when called into action, shall, but too soon, destroy such flattering expectations. It therefore becomes a point of duty in parents to investigate the tendency to hereditary complaints, before they connect their children with those, who can give but a temporary security against the most painful, afflicting, irremediable, or suddenly fatal diseases.

15. We hold it selfish at least, if not dishonest, for either sex to marry under such predispositions, when from the knowledge of the diseases of their forefathers, there was every reason to anticipate a perpetuation of them. Who has not witnessed the most deplorable consequences of such unions?—and who, after witnessing them, would not deprecate their continuance, or further propagation? This subject is one of much importance; for some of the best interests of society are involved in it; and every one is concerned in diminishing the evils spoken of, by preventing marriages which can promise nothing but the extension of the most dreadful diseases.* We have seen but too many instances of the perpetuation of the maladies above enumerated, not to feel desirous to arrest them, by recommending the two only means by which they can be either prevented or mitigated;

* We have been much pleased with the observations of Dr. Reid upon this important point, as they convey and enforce our own sentiments. "Nothing can be more obvious, than that one who is aware of a decided bias in his own person towards mental derangement, should shun the chance of extending and of perpetuating, without any assignable limit, the ravages of so dreadful a calamity. No rites, however holy, can, under such circumstances, consecrate the conjugal union. In a case like this, marriage itself is a transgression of morality. A man who is so situated, in incurring the risk of becoming a parent, involves himself in a crime; which may not improbably project its lengthened shadow, a shadow too which widens in proportion as it advances over the intellect, and the happiness of an indefinite succession of beings."—*Med. Chirur. Rep. for July, 1830, p. 90.*

namely, by judicious and well assorted marriages, and a well conducted physical education.

16. By the first means, we may stop, in a great measure, the hereditary transmission of predisposition, by selecting such subjects as shall be free from constitutional taint; or, at least, we may diminish by this plan the risk of such occurrence, if we cannot ensure exemption from it. We may also do much good by preventing altogether the union of such as may have these tendencies; or diminish the evils in a degree, when nothing better can be done, by not admitting to this union more than one of a party who may have hereditary taints.

17. By the second, much may be effected; by invigorating the general system, so as to render it less susceptible to exciting causes: by attention, while conducting this education, to strengthen the particular parts, which may be predisposed to disease. But of this more by and by.

SECT. IV.—*Of the immediate State of Health.*

18. By the immediate or actual state of health, we would wish to be understood, that condition of the system in which either of the above named diseases is absolutely developed. It might, at first sight, appear strange, that we should notice this state of the system; as every one would seem to be apprized of it, and, consequently, the person labouring under it would not be considered eligible by any one, for the married state. But this is not exactly so; as we find that every kind of artifice is resorted to, to hide this condition from those most interested in the knowledge of it,—hence, the frequency of marriages, under such circumstances.

19. Besides, it but too frequently happens, that this foreknowledge is entirely disregarded by the persons most concerned—this may arise from several causes: 1st, to a want of proper feeling for the consequences of such diseases, when extended to offspring; 2d, to a hope of an escape from their consequences, as sometimes happens; 3d, to an ignorance of their nature, and of the risk of their propagation; 4th, to a disgraceful selfishness, where fortune or beauty is concerned.

20. In Europe, they have such dread of the perpetuation of

these diseases, (with, perhaps, the exception of gout,) that the inquiry is frequently made in the higher ranks of society, before the marriage contract is signed, whether either of these diseases actually exist, or whether the parties be liable to them by hereditary descent; and we are informed, that marriages have been frequently broken off, and even at a late period, when it was discovered, on the side of either party, that scrofula, consumption, or madness, had existed, or was actually existing, in any member of the family.

21. It is not, however, predisposition to disease, or its actual existence, that exclusively disqualifies the parties for marriage—or that may entail feebleness of body or mind upon offspring; for there are others, equally certain, though less notorious to common observation; such are the habits of general dissipation, or habitual intoxication. The first appears to have most effect upon the body, the latter upon the mind; therefore, a woman should not unite herself to a man who labours under either, if it be known; and the laws should protect her by granting a divorce, if it occur after.

22. In this country, the vice of intoxication is more common than the other; but, unfortunately for the poor female, it but too often occurs only after marriage; and against this the laws make no provision—she is then doomed, in her own person, to all the horrors which await the vice; and her children are to be the inheritors of feeble constitutions: or, what is, perhaps, worse, the predisposition to derangement of mind, or, the perpetuation of the same vice.

23. On the part of the female, certain physical disabilities may exist, which would render her ineligible for the married state: these should neither be concealed, nor passed over lightly; since, with a knowledge of them, it would be dishonest towards the man she may marry, as well as fatal to herself. We would, therefore, recommend to a woman who may be deformed, to abstain from marriage, as she may purchase the title of wife at too high a price; and we would advise such as may be disposed to cancerous affections, or such as may have one in an active state, to refrain from this state, as she can promise herself no advantage from this ceremony, as regards the melioration of her disease; for with it she will linger through continued ill health and pain, become a source of misery and expense to a husband,

whose patience and resources may too easily be exhausted, and thus fall an earlier victim than from disease alone.

24. We would also recommend the female not to put off this ceremony to too late a period of life, when she can with propriety do otherwise; unless she be content to endure more than ordinary suffering from child-bearing, and become regardless of the pleasure of seeing her children settled in life before she leaves the world, by even the common contingency of age. Women who have passed the thirty-fifth year of life, might, perhaps, do best to submit to farther procrastination, and permit the period of child-bearing to pass before they marry. (*See par. 4, 5.*)

25. Upon the same principle, in part, would we caution the very young girl not to enter into this state; as she, like the woman who may have waited too long, is liable to severe suffering from labour. In the woman too far advanced, the parts concerned in parturition, seem to forget, in a degree, their offices; while, in the too young female, they have not entirely or perfectly acquired the capacity. These facts are too well known, to be disputed; and nature seems to have contended for prerogative in both instances. Shall we then become voluntarily blind, by shutting our eyes against her obvious intentions? Do not these facts emphatically declare, there is a time best fitted for marriage? This time we shall fix at nineteen for the earliest, and five and twenty for the latest best periods. (*Par. 4, 5.*)

26. We do not, however, mean to say, the period fixed for the earliest may not, without any very great risk, be anticipated a little; or that the second may not safely be exceeded—we mean merely to insist, that the periods just designated are best as general rules; for it is but general rules we can lay down upon this subject.

CHAPTER II.

OF THE CONDUCT OF THE MOTHER DURING PREGNANCY.

27. When we consider the delicacy and uncertainty of the attachment between the ovum and the uterus in the early months

of pregnancy; and the facility with which this union may be destroyed, we cease to wonder, that abortion should so frequently take place; but, at the same time, we are taught to acknowledge, the care that is required for its prevention.

28. Could we excite in the female a proper dread of this accident and its consequences, by representing the facility of recurrence; the difficulty of interrupting its course when a habit is established; and the terrible train of evils in its suite, we should make her careful how she incurred the risk to which so severe a penalty is attached.

29. Should she, however, disregard the physical evils which so uniformly attend habitual abortion, and set at naught mere bodily suffering, she surely could not resist the appeal which a neglect of proper care constantly makes to her moral sense: she would most certainly question her right to destroy the fruit of a union she is bound to hold sacred, by conduct of her own, when it was completely in her power to have prevented abortion by the observance of a few rules, which neither require severe privations, nor very rigid conformities.

30. To us, who are familiar with the consequences which follow repeated abortion, it is truly a matter of surprise, mingled with regret, that females should so entirely shut their eyes against them, and brave the evils, numerous and serious as they are, rather than submit to a properly regulated plan for the interruption of their progress, or to avoid the causes which may produce them. We have but too often seen the fairest promises of health and long life blasted, by disregarding the friendly warnings, a first or second accident of this kind had given; and we feel it an imperious duty to proclaim the nature of those evils which are sure sooner or later to follow, in hope it may awaken the female to a sense of her danger, and excite her to a due regard for her future welfare.

31. To the fine lady by profession, we are well aware this appeal would be in vain; or, at least, it will not challenge her attention, until her health is either about to be destroyed, or very seriously injured; or, when there is but an uncertain chance of recovery.

32. The consequences of repeated abortion are, first, a bad state of *Leucorrhœa*; second, immoderate flow of the catamenia, attended very often by the expulsion of coagula; their too fre-

quent returns; or that distressing condition of this discharge, called dysmenorrhœa, or painful menstruation; thirdly, dyspepsia, with all its terrible penalties; fourthly, scirrhi and cancers; besides many other evils of minor importance. The catalogue here exhibited, is not the sportings of the imagination; it has but too real a foundation, as every practitioner of experience can safely testify.

33. To prevent the consequences above stated, (32,) the pregnant woman must scrupulously avoid, 1st, such motion as shall unduly exercise her muscles; as too long walks, especially in such weather as will endanger her falling; or as shall overheat her, as dancing in very hot weather; hastily running up stairs; lifting heavy weights, &c.; 2d, all such as shall take her mind by surprise, if we may so term it, as unpleasant or dangerous sights; 3d, all such as shall inordinately hurry her circulation, as heated rooms, or stimulating liquors, &c.; 4th, all such as shall embarrass the intestinal canal, or too severely tax the powers of the stomach; as flatulent vegetables, too great a quantity even of proper food, or any quantity taken at improper seasons, as late suppers, &c.; 5th, all such as shall give too frequent motion to the bowels; as brisk or drastic purgatives; or such as shall too much retard their motion, as the unnecessary use of laudanum, or the unnatural use of chalk, or disobeying the proper calls of nature, &c.; 6th, all such as shall make too severe and partial a pressure upon the chest, and abdomen; as tight lacing, &c.; 7th, all such, as shall increase the irritability of the system; as the immoderate use of strong tea, coffee, opium or other narcotics; and the too long indulgence of repose in warm feather beds; 8th, all such as shall too exclusively occupy the mind; as severe study, night-watching, &c. &c.

34. But let not the mother believe she completely discharges her duty, or that she gives the best possible chance to her offspring, by merely escaping from a miscarriage. In this opinion she would certainly not be supported either by facts, or reasoning; for it is well known to those who are best acquainted with the subject, that the proper circulation and nutrition of the fœtus, may, by the improper or heedless conduct of the mother, be impaired, though the fœtus itself may not be destroyed. Of this we have abundant proof in the cases of those who narrowly escape from this accident, and who have had repeated threatenings; there-

fore, it behooves her as a rational, and an accountable being, as far as possible to avoid every risk of provoking abortion. She must not flatter herself, because she has not miscarried, that she has done no injury to the fruit of her womb. How many instances can almost every mother call to mind, of offspring born feeble and emaciated, and continued to be so, or with difficulty recovered when the cause might be traced to some impropriety of conduct on the part of the parent, or to some accident during the period of utero-gestation, which might have been prevented?

35. We are well persuaded, that much injury has been done by the prevalence of certain vulgar errors upon this subject; some of which it may be well to examine. It has been handed down from time immemorial, that pregnancy was constantly accompanied by a plethoric condition of the blood-vessels, and that, consequently, there was a returning necessity for blood-letting. And practice has very constantly been made to conform to this hypothesis by the ignorant or designing, and sometimes to the very serious injury of the patient. It is, however, our deliberate opinion, that this state of fulness does not always exist; and when it does, it by no means follows, that it should always be subdued by bleeding.

36. We are warranted by long experience to declare, that unless this plethora produce some direct evidence of a mischievous tendency, as headach, pain in the chest, a sense of fulness in the head upon stooping, giddiness, &c., the patient should not have recourse to bleeding, without the express approbation of the physician. And perhaps it would be erring on the safe side to say, that even where the symptoms just enumerated are present, his advice had always better be asked.

37. To women who are in the habit of miscarrying, this prescription of indiscriminate bleeding is particularly important; especially, as it is the remedy almost universally resorted to for its relief; than which, in very many instances, nothing can be more preposterous or improper. We know ourselves to be justified in saying, it has very often produced the evil it was intended to prevent.

38. We are happy to avail ourselves of the opinion of the celebrated Dr. Struve upon this point; and shall quote his own words: "Many erroneously imagine that blood-letting is useful during pregnancy; hence, mercenary bleeders and imprudent midwives,

contribute to support that ill-founded opinion. It is, however, certain that venesection is a remedy which ought not to be resorted to, without the greatest precaution, as the loss of blood may precipitate a pregnant woman into many dangerous diseases, and even occasion miscarriage. Instances of this kind have occurred in my own practice; and I have known ladies who have unfortunately been subject to successive abortions, because, by the advice of their friends, they regularly submitted to be bled upon such occasions. On their becoming pregnant again, I warned them of the mischief resulting from this practice, and they now enjoy the happiness of being mothers.”*

39. We admit without hesitation, that there is a strong tendency to fever and fulness during gestation, when there is any cause in operation which may be capable of exciting the system to unusual action, or of filling the blood-vessels in an unusual degree; and it was under this impression, that we recommended the cautions suggested above. (33) For we are fully persuaded, that for the most part, a proper observance of the rules just referred to, will very frequently render blood-letting unnecessary; nay, nature institutes nausea, and vomiting, to keep down this excessive fulness.

40. It must not be inferred, however, from what has just been said, that we are hostile to blood-letting—this is very far from being the case; we consider ourselves among its warmest advocates, if a necessity for its employment really exist: it is against its abuse alone, that we contend. We attach great value to this operation, where there is evidence of its necessity; and believe it oftentimes capable of affording relief, where no other remedy, perhaps, would avail; but of this necessity the experienced and judicious physician should be the only judge; it should not be left to the decision of every old woman.

41. From what has just been said, it will appear, that it is not our opinion, that pregnancy necessarily renders the use of the lancet proper—it is a vulgar error to suppose so: and as this remedy is sometimes resorted to solely because impregnation has taken place, and this, as stated above (35, 36, 37,) with manifest injury, the sooner this error is corrected the better. We have a hundred times refused our assent to this operation, because

* Treatise on Physical Education, p. 169.

there was no one reason for its being resorted to, save that the woman was pregnant. Under such circumstances, it is but little in its favour to say it can do no harm—but even to this trifling recommendation, it is not always entitled; for we can most safely declare, we have frequently known it do serious, and sometimes irreparable mischief.

42. There is another error of no less moment than the one just combated, and which should also be corrected—namely, the free indulgence of a wayward, or a voracious appetite, because the woman is pregnant; and because, according to common parlance, she has a child within her to support. We have often heard this reason given by females, who availed themselves of this condition to gratify their appetites for food, without the smallest regard to consequences. Indigestion, colic, cholera morbus, and even convulsions, have been too often the melancholy consequences of such indulgence.

43. As this error originates in theory, it may be well to examine its pretensions; and if we can show, that there is no absolute necessity for taking more food than ordinary, we shall be, perhaps, more able to do away the practice.

44. The demands which the fœtus makes upon the mother for the means of its increase, is in proportion to the time of its continuance within the uterus. Now, if we average the weight of new-born children, eight pounds, would be excessive for each.* But, we will assume it to be such: this, of course, will give one hundred and twenty-eight ounces; the placenta, and membranes,

* The average we have taken is excessive, perhaps even for this country, but decidedly so for Europe.—In France, or rather in Paris, at L'Hospice de la Maternite, the following table will show a much smaller average in 7077 cases, viz.

34 weight from	1 pound to	1½ pound.
69	2 do. to	2½ do.
164	3 do. to	3½ do.
396	4 do. to	4½ do.
1317	5 do. to	5½ do.
2799	6 do. to	6½ do.
1750	7 do. to	7½ do.
463	8 do. to	8½ do.
82	9 do. to	9½ do.
3	10 do. to	10½ do.

Making an average of little more than six pounds.

may yield one pound more; and the liquor amnii, as much; the account will then stand thus:

Fœtus—8 lbs. or	128	ounces
Placenta, and membranes	16	do.
Liquor Amnii	16	do.

Total 160 ounces, or 10 pounds;

which will make a daily average demand to less than three-fourths of an ounce, since it requires about two hundred and eighty days for the perfection of the child: now this quantity is every way too small, to require an increase of ingesta, if the quantity taken each day were absolutely and duly weighed; since, it is well known to every one, that we habitually take more food into our stomach, than is strictly required for the nourishment of the body,* and, of course, the woman can spare daily, without the slightest disadvantage, the quantity of food necessary to furnish three-quarters of an ounce of blood to be applied to the immediate purpose of the fœtus; or, in other words, the woman could furnish daily this quantity of blood for the purposes of the child; without feeling the demand to be oppressive; consequently, she cannot require a freer indulgence in food.

45. Besides, what does nature herself dictate upon this subject? Let us see if she really do not solicit a reduction of the quantity of food, rather than ask for an increase of it.—What happens to almost every woman very soon after impregnation has taken place? Nausea and vomiting. Now, do these not most emphatically declare, that the system requires reduction, rather than an increase of fluids? or why should this subduing process be instituted? It certainly cannot be intended for any other purpose, since it is not only almost universal, but highly important when it occurs, as it would seem to add much to the security of

* To show how very much more is taken into the stomach than is required for the purposes of the system, we will extract a note from Friedlander's *L'Educatio Physique de l'Homme*, p. 130. "I was informed," says Mr. Friedlander, "by the senator Moscati, that he gave a large dinner one day, and had, as a matter of curiosity, every article of the dinner weighed; and he found that one great eater had destroyed one hundred and ten ounces, and that an ordinary feeder had eaten eighty-four ounces." These experiments were made at Milan; he supposes not with the utmost exactitude; but they show with great certainty, that very much more is taken, than can possibly be required for the purposes of nourishment.

the foetus; for, it is a remark, as familiar as it is well grounded, that very sick women rarely miscarry—while, on the contrary, women of very full habits, are disposed to abortion, if exempt from this severe, but, as it would seem, important process.

46. While on the present subject, it may be thought incumbent that we should say a few words upon that whimsical demand, or “longing” for certain substances, the reality of which desire has been doubted by many. No man, however, of experience, we think, will for a moment deny, that, during pregnancy, there exists occasionally the most wayward appetite, and that even to the extent to which it is said sometimes to urge the unhappy patient.

47. As regards ourselves, we are entirely convinced of its existence; though we are not altogether prepared to determine the advantages of its gratification, or the evils which might arise from disappointment. We are certainly in possession of some remarkable facts upon this head; and, in many instances where it could not be construed into an attempt to procure “the good things of this world” by sinister means. If women, who are governed by this *hallucination* of the stomach, were always to demand the most grateful or savoury food, there might be some room to suspect the employment of stratagem. But when this morbid, and fastidious appetite, sometimes demands for its gratification the most disgusting and forbidding articles, we must yield to the belief, of the positive existence of “longings.” We pretend not to account for this peculiar condition of stomach—we know it only as an attendant upon pregnancy; and will illustrate it by detailing some remarkable instances of it.*

48. Mrs. —, when not pregnant, had a great horror of eels; but, when in this situation, demanded them with an importunity not to be resisted. She, therefore, would not only eat them with

* We beg, however, that our opinion upon this subject may not be construed into an attempt to foster or perpetuate, that waywardness of appetite, or capriciousness of selection, of the more stimulating and piquant dishes which are so frequently indulged in by women when pregnant: we totally disclaim any design to countenance such contemptible stratagems, with a view to exact compliance from an indulgent husband, through the medium of his fears, or his affections. The desires here alluded to, have their origin in mere fastidiousness and affectation—those we believe in, arise from the absolute cravings of a distempered stomach.

avidity, but in large and repeated quantities, for the first few months; she would then become indifferent to them, but not averse, until after her delivery.

49. Mrs. —, riding over a common, scented some spoiled shad, that had been thrown out; she was instantly so fascinated by their odour, that she obliged her husband to take some of them into his gig; and, as soon as she arrived at home, began to eat of them, raw as they were, and continued to do so daily, until they were consumed, though they were extremely offensive to every body else in the house.

50. Mrs. —, in passing through her kitchen, saw a piece of bacon skin boiling in the soap kettle: she had it taken out immediately, and she ate it with great avidity.

51. Each of the cases above stated, with the exception of the first, was related to us by the lady herself; in the first, we, ourselves witnessed the eagerness with which the eels were eaten, and received the history of this lady's aversion to them when not pregnant, from her own mouth. Of the truth of the others, we have not the slightest doubt, as the ladies were of undoubted veracity. It is true, these are extreme cases; but they go to establish the existence of this peculiar appetite, and its indiscriminate, and, we may add, of the two last, filthy selections. Instances of minor enormity are familiar to every body.

52. In stating our belief in this peculiar, and indomitable craving of the stomach, we admit nothing in favour of the popular opinion, that a disappointment in procuring the desired article, would be attended with any more serious consequence, than would follow a disappointment of any other kind, at a period when the woman was not pregnant—it might, indeed, nay it very often does occasion sickness at stomach, a temporary loss of appetite, and sometimes vomiting; but here the evil ceases, as far as we have observed.

53. Nor do we believe in the influence of the "imagination" upon either the form, colour, or future destiny of the child, however powerfully this faculty may exert itself during gestation—we entirely reject all the reasoning, as well as the appeals to facts, purporting to be illustrative of this wonderful influence. We have, ever since our commencement in business, been attentive to this subject; and we can most conscientiously declare, we have never in a single instance had reason to believe that the imagination

had exerted the slightest control upon the *fœtus* in utero; though this is contrary to our early belief upon this subject.

54. As we feel this to be a subject of high interest to the female, we trust we shall be excused for occupying a few minutes in its consideration; and the more especially, as we believe, that when the mind is so tenaciously occupied upon the object of its aversion, (as we always find it is,) when an apprehension has been once excited, it may do mischief to the *fœtus*, by impairing its pabulum during gestation, through the medium of the stomach or blood vessels, or both; and hence is connected with the "Physical treatment of children."

CHAPTER III.

OF THE INFLUENCE OF IMAGINATION UPON THE FŒTUS IN UTERO.

55. There is no delusion of the mind during pregnancy, that renders the woman so truly wretched, as the belief, that the imagination can exert an injurious control over her child. Should she have an ungratified longing; should she have been disagreeably surprised, or greatly alarmed; or, above all, should she have been terrified by some frightful or disgusting object, she at once becomes possessed with the apprehension, that her unborn babe will receive an injury or blemish, similar to that which had excited her aversion, or caused her alarm. She dwells upon this idea with such pertinacity, that she becomes almost a victim to its influence. Her nightly "imaginings" are those of horror; and the day affords no relief, as her mind teems with prejudices, which are in favour of an influence most earnestly deprecated; and nothing but the delivery of an unblemished child can sooth her agitated feelings, or remove her long-cherished fears.

56. The origin of this belief, it is true, is coeval with our earliest records; but its antiquity should not entitle it to the least force, when this argument alone is employed; for, were this to be a rule, there would be no end to error, however powerfully combated by reason, or opposed by facts. No one circumstance

connected with the history of this prejudice, has so effectually contributed to its permanency, as the successful stratagem of Jacob, to secure to himself all the "ring-streaked" cattle from the flocks of Laban, as his reward for his faithful services to his selfish father-in-law, by placing before them, when they were about to drink, "rods of poplar, and of hazel, and of chestnut tree" on which was pilled white streaks. Indeed, this may with much propriety be considered as the origin of this distressing illusion; and it certainly is one on which the sticklers for this opinion chiefly rely, when strongly opposed by facts, and reasoning.

57. We are willing to give every credit to the fact of Laban's cattle becoming "streaked" by Jacob's scheme; as we may unreservedly believe in it, *in that particular instance*, without our standing committed for the belief, that this effect continues to be perpetuated to this moment. In the case under consideration, we are of the opinion with many enlightened divines, that there was God's direct interposition in favour of Jacob, against the crafty Laban; since, as such means would not in general produce similar effects, it is more reasonable to suppose, that he was directed, (in the plan he adopted,) by some divine intimation, and rendered successful, if not by a direct miracle, yet by the Lord's giving a new, and uncommon bias to the tendency of natural causes. "Scott's Family Bible, Gen. Chap. XXX." And this supposition is rendered still more probable, by what follows in verses, 10, 11, 12, and 13, of Chap. XXXI.

58. If, then, we have rendered it more than probable that the hand of the Lord was in the effect produced by Jacob's mottled rods, we think that much of the feeling upon this subject should be abated, and the mind be permitted to listen to the suggestions of reason, and yield to the force of facts.

59. To remove these apprehensions altogether from the minds of pregnant women, is perhaps impossible; for so fixed are their prejudices, and so cherished are their impressions upon this subject, that it is no longer a matter of *reason*—it is one almost exclusively of *feeling*. Yet we flatter ourselves the force of this error may be diminished, though not entirely subdued, by arguments, based upon the solid foundations of anatomy and physiology, and from facts, which deserve to be well weighed, before they are rejected.

60. In the infancy of medical science, the opinion that the

imagination exerted an influence on the child in the womb, was implicitly received; and Hippocrates himself, assisted in the propagation of the delusion. It became not only a popular, but a fashionable belief; and kings and nobles, with the hope of realizing its efficacy, acted upon the principle; and even when certainly abused by their wives, they nevertheless credited its influence. It was made use of, (honestly we doubt not, at the time,) in some instances, for the protection of the supposed innocent, against the severity of the law, or the indignation of an injured husband. Thus Hippocrates saved by his testimony a noble woman who had been charged, because she had borne a coloured child, (she and her husband both being white,) by alleging that the darkness of its colour was the effect of a picture of an Ethiopian, which hung in her chamber, and which was often the object of her contemplation.* And Soranus declares that the tyrant Dionysius, who was deformed and ill-favoured himself, employed the aid of beautiful pictures, with the hope, that his wife might have comely issue.†

61. Galen was also of opinion, that a picture was sufficient to give a corresponding appearance to the fœtus in utero. And Cælius Rhodius informs us, that Fabius Quintillian saved a woman from susceipion after she had brought forth a little negro, by asserting, that the circumstance arose, from her taking great pleasure in viewing the picture of one in her chamber.† And it was from the prevalence of this popular belief, that Heliodorus formed the first, and, we may add, one of the most beautiful novels in the world. It is called the “Loves of Theagenes and Characlea;” the latter being born white from Ethiopian parents: but the Queen, her mother, had often viewed, during her pregnancy, the picture of Andromeda, who was painted with a white face; the sages attributed the white colour of the child to the force of the mother’s imagination.

62. Such notions upon this subject have existed from the earliest history of the world; and such still continue to the present moment; but, with this exception: if cases like those related of Hippocrates and Quintillian were now to be presented for judicial decision, few juries would have sufficient hardihood to attribute the effect to the force of the imagination; yet some not

* Turner, p. 169.

† Ibid. p. 170.

less marvellous and extraordinary stories gain full belief, at the present day, though not entitled to credit, in any superior degree.

63. The different modes in which the imagination is supposed by its sticklers to affect the fœtus, are, 1st, by imposing upon its skin certain resemblances to things on which the fancy has been deeply concerned, or employed; such as fruit, wine, insects, or animals; 2d, by the production of additional parts, as two heads, four legs, additional fingers, toes, &c. &c.; 3d, by the absence or destruction of certain parts; as a leg, or arm, or both; the want of a head or hand, or foot, or lip, &c. &c.

64. The alleged effects of the imagination upon the fœtus in utero, manifest themselves in one of the three modes just named. (63) We shall, therefore, say a few words upon each of these heads, respectively; and, first, we shall consider the nature of the connexion which exists between the mother and child, that our objections to the power of the imagination, may be the better understood.

65. Anatomy has most satisfactorily proved, that the connexion between the mother and child, is altogether indirect; and carried on only through the medium of the circulation. It has also shown, there is no nervous communication between them; or, in other words, that there has never been detected any nervous filament of the mother, entering any portion of the fœtal system.* From this wise and all-important arrangement, it follows, that the fœtus is not subject to the various and fluctuating condition of the sanguiferous, or to the never-ending changes of the nervous system of the mother; since, no direct communication exists between her blood-vessels, or nerves, and those of the fœtus, to impose upon it any alteration that may take place in her system, or to render the child liable through the medium of nervous connexion, to her affections.

66. If the arrangement be such as is now represented, and of the truth of which there cannot be a reasonable doubt, we may ask, how any condition of the arterial, or any affection of the brain and nervous system of the mother, can have an influence, or exert a control, over both these systems of the fœtus, which

* Sir Everard Home may be cited in opposition to this assertion; but we are of opinion that Sir E. stands alone in this belief: he certainly has not demonstrated them, so as to satisfy any body but himself.

has no direct connexion with the one, nor even an indirect one with the other? Were this arrangement between mother and child more closely studied, better understood, or more justly appreciated, we should hear much less of the influence of the imagination of the mother upon the body of her infant; and one of the most agonizing conditions of the human mind would be removed from the list of evils, attendant upon pregnancy.

67. No one, so far as we know, has determined at what period of pregnancy the influence of the imagination ceases; or, in other words, at which it cannot be successfully exerted—every period of utero-gestation, agreeably to the histories given to prove the powers of imagination, seems alike liable to its control. Now, this admission proves in many instances too much; for it not only gives to the fancy a generative power, but also an annihilating one. Thus, in some cases, an arm, a leg, a thumb, or a toe, is added to the child; while, in others, there is a loss of one of these parts. Who has ever detected the severed member, or part, escaping from the womb of the mother, at the birth of the mutilated child? Must this not have been observed, had the histories of such cases been a faithful relation of the influence of the imagination?

68. Besides, it gives to this power another very extraordinary capacity; namely, the stopping of the blood, after the part has been separated from the body, or limb; for the child does not die of hæmorrhage while in utero, but is absolutely born alive! We once knew an instance where there was but the stump of an arm, which at the time of birth was perfectly healed, or rather, discovered no evidence that it had ever been a wound; yet the mother, in this case, declared herself to have been frightened, at the six month of her pregnancy, by an impudent beggar, who was well known in this city. But what became of the lopped off arm?—what arrested the bleeding? We certainly did not discover it; nor had we any evidence that there had been a bleeding; for the child was born healthy and vigorous; and no mixture of blood was discovered with the waters. Now, we must ask again, what became of the cast off arm? or what arrested the bleeding?

69. Again, where resemblances have been supposed to be detected, between the child and some animal by which the mother had been frightened; and this sometimes even at a pretty advanced period of pregnancy, the power of the imagination must

be very wonderful indeed, since, in order that the supposed effect should be produced; it must have new-modelled the head, though the bones of the cranium must have been pretty solid. Thus, Bartholine* informs us, that in the year 1638, a woman was delivered of a child in every way well shaped, except the head, which resembled that of a cat: this deformity was owing to a severe fright which the mother had received, by a cat getting into her bed. In this famous case, if the point of resemblance to the animal by which the mother may have been frightened be admitted, it must also be acknowledged, that the head of the child must have been remodelled by some plastic power of the imagination! a circumstance not to be acknowledged by reason, nor to be proved by fact—therefore this case, like many others we could cite, proves too much.

70. We will not deny that instances occur occasionally of the perpetuation of supernumerary parts, or even marks, in certain families; such as an additional thumb, or toe, or finger, or a mole; but these cases are not the result of any exercise of the imagination—they are the mere continuance of peculiarity, such as of warts or blotches, the instances of which are numerous—but here the fancy has no agency in their production.

71. We have been attentive to this subject, as already remarked, for many years; and commenced our observations under the full persuasion of the efficiency of imaginative influence, and abandoned it only because it could not be sustained by facts; and, at this moment, we are entirely convinced that the fancy exerts no control whatever over the form of the fœtus.

72. We may mention here with much propriety, and we wish we could hope with as much effect, the opinion of the late celebrated Dr. William Hunter upon this subject. Dr. Hunter used to declare in his lectures that he experimented in a lying-in hospital upon two thousand cases of labour, to ascertain this point. His method was as follows:—As soon as a woman was delivered, he inquired of her whether she had been disappointed in any object of her longing, and what that object was, if her answer were yes. Whether she had been surprised by any circumstance that had given her an unusual shock; and of what that consisted. Whether she had been alarmed by any object of an un-

* Hist Anat. Cent. 3. Hist. 44, as quoted by Turner.

sightly kind; and what was that object. Then, after making a note of each of the declarations of the woman, either in the affirmative or negative, he carefully examined the child; and he assured his class, that he never, in a single instance of the two thousand, met with a coincidence. He met with blemishes when no cause was acknowledged; and found none when it had been insisted on.

73. It must, however, be confessed, that the Dr. owned he met with one case in his private practice, that puzzled him; and he told his pupils, he would merely relate the facts, and leave them to draw their own conclusions. A lady had been married several years without proving pregnant; but at last she had the satisfaction to announce to her husband that she was in that situation. The joy of the husband was excessive, nay, unbounded; and he immediately set about to qualify himself for the all-important duty of educating his long-wished-for offspring. He read much, and had studied Martinus Scribelerus with great patience and supposed advantage, and had become a complete convert to the supposed influence of the imagination upon the foetus in utero. He accordingly acted upon this principle. He guarded his wife, as far as in him lay, against any contingency that might affect the child she carried. He therefore gratified all her longings most scrupulously; he never permitted her to exercise, but in a close carriage; and carefully removed from her view all unsightly objects.

74. The term of gestation was at length completed; and the lady was safely delivered, by the skill of Dr. Hunter, of a living and healthy child; it had, however, one imperfection—it was a confirmed *Mulatto*. On this discovery being made, the father was at first inexorable; and was only appeased by his dutiful and sympathizing wife calling to his recollection, the huge ugly negro, that stood near the carriage door the last time she took an airing, and at whom she was severely frightened!

75. Our limits do not permit us to do more ample justice to this subject, by employing additional arguments, or more numerous facts, to disprove the agency of the imagination upon the foetus in utero; we shall therefore dismiss it; and trust to what we have already said, to awaken the woman to reason, or at least to raise in her a rational doubt of the powers of the imagination over the fruit of her womb. We must now return to our general subject.

CHAPTER IV.

OF THE INDULGENCE AND EXERCISE OF TEMPER,
&c.

76. Besides the prohibitions already suggested, there remains to be considered the injurious tendency, an indulgence in unbridled passion has upon the immediate, as well as the future welfare of the *fœtus*. The immediate evils, which may result from yielding to temper, are convulsions, nervous inquietudes, uterine hæmorrhage, and, perhaps, abortion. Should this last not occur, the *fœtus* may yet receive such injury, as shall impair its natural stamina, and thus entail upon it a feebleness of constitution as long as it may live. It is a remark long since made, and we believe it to be in perfect conformity with fact, that passionate, and irritable women are more prone to abortion, than those of an opposite temperament. This fact, alone, points out the necessity and importance of resisting those tendencies to anger, which may threaten the life of the mother, or jeopardise the welfare of the child.

77. Nothing contributes more certainly to the safety, and future good health of the child, than cheerfulness of mind; or, at least, equanimity on the part of the mother:—this fact was well known to the ancients; and they acted upon it, accordingly, by giving great attention to the little wants of the pregnant woman; removing from her all disagreeable and disgusting objects, and constantly presenting her with subjects calculated to excite admiration, or to create agreeable impressions on the mind.

78. The ancient Greeks were firmly persuaded, that the imagination of the female had an influence upon the beauty of the child; hence the practice, as we have already noticed, (35) of constantly providing for the chambers of their wives, the most beautiful specimens of art; such as the figures of Apollo, Bacchus, Castor and Pollux, Antinous, Narcissus, &c.; that they might dwell upon their fine proportions, with that complacency of spirit, which a beautiful object is sure to produce. And we believe, if this scheme ever had success, it was by producing a

tranquillity of mind, rather than by any formative influence of the imagination. On this principle, also, we would explain the observation of Nicolai;* who, while visiting some of the Catholic provinces of Germany, found a number of female faces, divinely beautiful; especially, when engaged in devotional exercises: this beauty had most probably been transmitted to them by mothers, who enjoyed the calm and placid sensations, which religious exercises are wont to produce. Here, then, is a powerful motive to preserve equanimity, especially in the earlier months of pregnancy; as well as to curb a rising and rebellious spirit; and, at the same time, by an indulgence in innocent pleasure, to chase away the gloom too common to pregnancy.

CHAPTER V.

OF THE FOOD PROPER FOR PREGNANT WOMEN.

79. It is not necessary to give in detail the articles of food which may be proper, for the pregnant woman; especially, as in general they injure more by the quantity, than the quality: a circumstance we have already adverted to, and which need not be repeated. But we must not pass over in silence the highly injurious effects of an indulgence in stimulating drinks.

80. It is a truth, which we must not disguise, that a habit of taking too large a quantity of strong drink is sometimes contracted during pregnancy, from a desire to overcome the unpleasant sensation commonly present at this period, by using some cordial, or tincture, of high character for this purpose. Every body is aware, how often nausea and other distressing sensations assail the poor female, particularly in the early part of her pregnancy. To remove this, the good old gossip she may chance to consult, recommends the use of the compound spirit of lavender, the essence of peppermint, noyau, &c., which, by affording, perhaps, a temporary relief, is again and again resorted to—the quantity is, of course, a little increased at each time, that

* Struve.

its effects may be maintained; and, by and by, the disgusting habit of tippling is too certainly established.

81. No gratification is so dangerous as this: it should be resisted from the moment it begins to be importunate; and a deaf ear should be turned to the dangerous maxim, "that, if you want it, it will not hurt you." We have more than once seen health, domestic happiness, and even reputation, destroyed, by this dangerous, and insidious counsel.

82. It must not, however, be imagined, that the extreme cases, just stated, are essential, to constitute its hurtful tendency upon the *fœtus* in utero. Intoxication is, comparatively, a rare vice among females; yet some are too much in the habit of indulging, during the period of pregnancy, in the use of ardent spirits; and, it is wrongly imagined, that any quantity this side of inebriety is not hurtful; than which, nothing can be farther from the truth. For every thing that unduly stimulates the system at this time, is highly injurious, by putting both the nervous and vascular systems in an unnatural condition; consequently, the functions, so important to the welfare of the *fœtus*, are interfered with, or imperfectly performed—and hence, the children of women, who over-stimulate, or become intoxicated, are always less healthy, and less vigorous, than those of mothers who observe a contrary conduct.

83. We are persuaded, from what we have seen, that the indulgence referred to, is most frequently the result of false impressions; impressions, we should be happy to remove, by declaring to the deluded female, that she cannot, from any circumstance connected with her situation, gratify a disposition to take strong liquors, without incurring the risk of destroying her own health, and that of her child.

84. From what has been said, it would appear, that the woman has an important duty to perform, during the whole period of utero-gestation; and that her offspring may not suffer, in either body or mind by her imprudence, she must most carefully avoid all the causes and circumstances enumerated above. Should she entirely neglect, or but imperfectly observe the rules so important to the welfare of her child, she becomes culpable in proportion to the neglect. She may entail a frail constitution of body, a perpetual feebleness of mind, or, even fatuity itself; or

by exciting premature labour, she may immolate herself and her offspring.

85. To a feeling heart, the thought of having destroyed a child by heedlessness, must be productive of the keenest anguish; and this feeling may be permanent in its effects. We well remember an elegant, but rather a careless young lady, who became a prey, for several years, to a settled melancholy, because she had but too much reason to attribute a premature labour to her own neglect. Even after she became the mother of several children, she reproached herself for the loss of the first; and time alone blunted the severity of her self-upbraidings.

86. Were every female, during pregnancy, to regulate her conduct, as though she were accountable for the health and intelligence of her child, it would prevent much of the mischief so constantly witnessed; for, like fruit, properly so called, the child in utero requires a certain amount of care, for its preservation and perfection.

87. There is another point remains to be spoken of—one that is no less common than injurious; namely, the attention which pregnant women accord to the chilling and horrifying tales of gossiping beldames. This is of general occurrence, and is extremely injurious; their stories often sink deep into the mind of the unfortunate hearer, and tinge the remaining portion of her pregnancy with the most gloomy and melancholy forebodings. We have too often witnessed the evil tendency of this state of mind, not to warn the pregnant woman against indulging in these idle reveries—we once knew abortion very speedily follow a tale of horror; and, frequently, we have known months of sleepless nights succeed these evil communications.

88. The following case of abortion, (alluded to above,) is every way illustrative of the influence of ill-directed conversation. Mrs. —, in the fifth month of her first pregnancy, complained to an aged relation, of a pain in her right side; the old woman inquired minutely into its seat and duration, shook her head most significantly, and then said, she was very sorry to hear her complain of that pain, as Mrs. —, (a lady who had died a few days before,) complained in just the same manner, and it was owing to the after-birth growing fast to the side, from which the doctor was obliged to tear it, piece by piece, and

she died immediately after. The lady aborted before the next day.

89. Having cursorily considered in the preceding pages the importance of care on the part of the female during gestation, that the best possible chance may be given to the child which she is carrying, we shall merely add a few words upon her conduct, and that of her attendants, nearly at, and during the progress of labour.

CHAPTER VI.

CONDUCT TO BE OBSERVED, NEARLY AT, AND DURING LABOUR.

90. It would be a gross neglect of duty, should the woman disregard certain rules, which are of high importance to her own, as well as her infant's welfare, at the period of labour. We shall, therefore, lay them down for her consideration, even though she may not choose to adopt them for her government.

91. 1st, Let her seek the best possible aid for this anxious moment that the nature of circumstances will permit, both as regards her physician, and her nurse. The propriety of this advice will at once suggest itself, without putting us to the necessity of giving our reasons.

92. 2d, Let her not be impelled, by false theories, or by bad counsel, to use *too much* exercise towards the last period of pregnancy. We are aware this is not popular advice, but it is correct. For, she may be assured, whatever shall produce fatigue, will do mischief, by provoking premature labour. No animal, (save man,) when left to itself, at this period disregards the natural instinct: it warns them against unnecessary motion, or exertion, and they, therefore, always indulge in quiet.

93. 3d, When symptoms warn her of the approach of this important moment, let her not indulge in gloomy forebodings, nor yield to unreasonable fears for the event. But, on the contrary, let her console herself with the reflection, that death, or even an untoward circumstance is of extremely rare occurrence, when the case is under the direction of a judicious practitioner.

94. 4th, When labour has actually commenced, let her not yield to an overweening anxiety to hasten its progress, by taking, for this purpose, improper articles of diet or drink; nor, by repeated marchings in her chamber, hope to promote her general good, by exciting more numerous, or, apparently, more powerful contractions of the womb. Experience has never yet confirmed the propriety of this plan; and, to us, it appears every way certain that it never can. This is not the place to give our reasons, for this belief, but let it be relied upon, that it is entirely confirmed by observation.

95. 5th, As the very efforts of labour, however successfully or quickly exerted, must necessarily tend to hurry and disturb the circulation, and thus dispose to fever, let every thing, that can possibly increase the impetus of the blood, be carefully shunned, lest it take place—therefore, the woman must abstain most scrupulously from stimulating victuals or drink, during the progress of labour, under the specious, but false pretext, of supporting her strength, that she may the more successfully go through her appointed travail. Let her take the experience of others, on this point, for granted; and this declares, that an overcharged stomach is always unfavourable, at this time.

96. 6th, Let not too much anxiety be indulged for the event; nor too much apprehension be entertained, because the period of trial is of longer continuance, than was anticipated.—The patient must recollect, that the duration of labour is not absolutely under the control of any one; and, that, all things being equal, a slow parturition, especially with a first child, is safer than a very rapid one; and that eventual safety does not, in any degree, depend upon the speed, with which this process is performed.

97. 7th, As it is taken for granted that the woman will employ no one, in whom she has not proper confidence, to attend her at this important moment, let her not indulge in any opinions that may clash with those of her attendant; let her yield herself entirely to his directions, for she cannot fail to know less than her physician; therefore she is not entitled to be her own directress.

98. 8th, Let her especially guard against any gust of passion, any childish waywardness, or unprovoked fretfulness, lest the

nervous system be thrown out of balance, and hysterical convulsions ensue.

99. 9th, After she is blessed by the cries of her infant, a series of new duties immediately commences; and she must now yield implicit obedience to the directions of her medical attendant; she must have no opinions of her own, as regards her physical and medical treatment: submission is her duty, that she may be able to discharge, in the best possible manner, the important task of watching over, and rearing her offspring. To secure this power, the observance of the following rules, during her month of confinement, will be found important.

CHAPTER VII.

CONDUCT DURING THE MONTH.

100. As the future health and welfare of the child, after birth, mainly depend upon the healthfulness of the mother, and her capacity to supply it with sufficient and proper nourishment, it will follow, that this important office demands the utmost care, that she may be enabled to perform this delightful duty, with comfort to herself, and advantage to her child—therefore, she must,

101. 1st, Avoid causes, that may tend to produce, or to augment fever; as too early sitting up; unnecessary exposure; indulging in too stimulating a diet, and drinks; too hot a room; too nearly closed curtains; the exclusion of fresh air; and seeing too much company.

102. 2d, She must aid, by her own good sense, the endeavours of her physician to prevent the accession of fever, by not permitting the nurse, as is too often done, to run counter to his directions; she must, therefore, carefully examine her articles of diet, that no improper or forbidden substance enter its composition, as wine or liquor of any kind, animal food, or broths, until after the complete secretion of milk has taken place, and all risk of “milk fever,” as it is called, be at an end; that is, not until after the termination of the fifth day.

103. 3d, With a view to give the best possible chance for the breasts to perform their functions properly, and to prevent, as much as may be, the occurrence of that bane to nursing, sore nipples, she should have the child applied to them, as soon as she is sufficiently recovered from her fatigue to permit it; and this must be repeated every four or five hours, should nothing occur to render it improper.

104. 4th, *She must not delegate to any being the sacred and delightful task of suckling her child, unless there be the most decided and insurmountable impropriety, in continuing it at her own breast.*

105. 5th, She should most scrupulously attend to the dressing and undressing of her infant, if she cannot perform these offices herself: and, also, pay the strictest attention to its cleanliness; not suffering it to remain either wet or soiled, under the false pretext of making it hardy.

106. 6th, The mother should not permit her child to be fed, while she herself can supply it with sufficient nourishment: to ensure this of proper quality, and in proper quantity, she should eat nothing, which her experience has proved to be injurious; and she should take as much exercise in the open dry air, (as soon as her health is sufficiently confirmed to permit it,) as will contribute to the restoration of healthy action in her whole system.

107. The rules we have just laid down for the woman's observance during her labour and her getting up, as it is familiarly called, may require a few remarks to make them entirely intelligible, or to ensure conformity.



CHAPTER VIII.

OBSERVATIONS ENFORCING THE FOREGOING RULES.

108. To the first (91) we may observe, that, in the present improved state of midwifery, the risk of labour, when properly

conducted, is very much diminished. This improvement has arisen from that change of manners, which placed the care of the female, almost universally, in the hands of the male practitioner; and to the latter cultivating this branch, upon correct and well founded principles; principles derived from the laws of nature, and from correct observation.

109. The officiousness of ignorant practitioners, (as well male as female,) of this branch of medical science, arising either from a desire to be useful, or their supposing they can be so during the progress of a natural labour, becomes a fruitful source of immediate as well as remote evil. How many females may truly date the origin of many long-continued diseases from the improper interference and misconduct of the midwife or physician, in their first confinement.

110. It is proper we should say a few words in defence of our second direction, (92) as general opinion is against it; but we can safely say we have both reason and experience in its favour. Towards the latter period of gestation, there is, we believe, in almost all women, an inclination to repose; or it is rather, perhaps, an aversion from exercise; this arises, in most instances, from the inconveniences which are experienced from locomotion, owing to the increased weight of the womb and its contents; and the constant exertion, necessary to preserve the centre of gravity. Hence, we find women who may have borne several children, experience oftentimes much difficulty in preserving their centre, owing to the advanced position of the uterus; especially after the seventh month. Hence the disposition to a recumbent posture, as they find themselves more comfortable in it; and hence, the impropriety of interfering with this *instinct*. Besides, a long experience is in favour of our caution; we have a hundred times seen pains of labour prematurely excited, by over-exercise, near the end of gestation: we, therefore, uniformly protest, when consulted on this subject, against long walks, &c., by way, as is declared, of procuring a favourable delivery.

111. We are not, however, to be considered as unfriendly to all exercise at this time; on the contrary, we frequently recommend a moderate share of it—but we earnestly caution against fatigue; and, consequently, forbid exercise, to an extent that will produce it. And, if the analogy to which we have already appealed can furnish an argument in favour of our position, we may

certainly he taught a useful lesson, upon this subject, from the practice of the brute creation.

112. The consolation afforded in our third rule, (93) is founded upon extensive calculations, made from the reports of cases from different parts of Europe, and of this country; as well as upon those of many public institutions, in which the best possible chance offered itself for accuracy; and all of these tend to show how few women now die in child-bed, except occasionally, when some epidemic influence prevails to give child-bed fever. But let it be remembered, that this exception is almost exclusively confined to Europe, as we seldom or never witness such an atmospheric agency in this country.

113. The cautions, suggested in our fourth, (94) are the result of long and repeated experience; for no truth connected with the practice of midwifery is better established than the one that declares, as a general rule, that the preparative stages of labour, properly so called, should never be interfered with, by any attempt to hasten, or retard their natural march. When this has been attempted, the effects have ever been mischievous: therefore, the whole discipline to which a young creature is subjected by misguided gossips, or ignorant practitioners, especially with her first child, cannot be too severely reprehended. But we must not be understood to include in our censure, the proper and well-timed administration of suitable remedies, to relieve premature or inefficient pain; which frequently attacks the female; especially if her domestic duties require much or constant exertion.

114. But, at the same time, let it be remembered, that, in administering to real exigencies, much caution and judgment are required; and the cases, where such necessity exists should be confided to the care of an experienced practitioner. The indiscriminate use of laudanum, the lancet, and stimulating teas and drinks, cannot be too severely condemned, or too much feared.

115. Our fifth rule (95) is one of great importance, yet popular feeling is decidedly in favour of its violation. It is wrongly imagined, that great muscular strength is essential to the due performance of labour, and that this can only be supported, by the free use of nourishing and stimulating articles of diet; hence the common practice of urging patients to eat and drink "*to keep up their strength;*" and hence, the too frequent production

of fever. But let us place the result of experience in opposition to it;—this declares, that relaxation is the most favourable condition of the system for safe and speedy delivery.

116. The sixth admonition (96) is intended to prevent despondency in consequence of protracted labour, especially with a first child. It should be constantly borne in mind, that the progress of labour is almost always slower with a first, than with subsequent children: the cause of this peculiarity we are not exactly prepared to state; the fact is notorious, however, and should be declared to be so to the impatient sufferer; especially, when it can also be confidently declared, that there is no more danger, all things being equal, and under proper management, than with any subsequent ordinary labours. This may tend to inspire a proper confidence in the powers of nature, and in the skill of the attendant; points of much consequence, at this period of suffering. Thus needless anxiety and injurious impatience may be prevented. Rules 7th, 8th, and 9th, sufficiently explain themselves.

117. The first rule (101) is intended to prevent that artificial condition of the system, termed “milk fever;” we say, “artificial condition of the system;” for such, in our estimation, it almost always is. It is found constantly to exist, where the patient has indulged in the early use of either distilled or fermented liquors, animal food, broths, too great quantities of spices, or where any of the other causes enumerated in the proscription are in operation. We could wish, that the directions contained in the rule, (101) may not be carelessly passed over; as “milk fever” very often leads to the necessity of pretty active medical discipline, which must necessarily retard recovery, by producing weakness, or what is oftentimes very much worse, the formation of “milk abscess,”—a disease of long and painful continuance, and sometimes the cause of the entire destruction of the future usefulness of the breast itself. The child must now be robbed of its natural support, languish for want of proper nourishment, or be committed to the care of perhaps a careless or profligate nurse, who may entail upon it never-ending disease or debility.

118. The second rule, (102) is an appeal to the good sense of the patient, that the directions of her physician may not be disregarded, or she become the sufferer by her own supineness. A lying-in woman is looked upon, by the ignorant nurse, as in a

state of great debility; with a view to overcome this creature of her imagination, she employs all her powers of cookery, for a system already assailed, perhaps, by fever or very certainly disposed to it;—fever is kindled, and sometimes, before it can be quenched, the patient entirely succumbs, or escapes with a painful and protracted convalescence. Does it not then become the duty, as well as the interest, of the patient, to co-operate with her physician in the proper application of his remedies, and in the observance of his directions? It should be constantly borne in mind, that no patient runs counter to the directions of her physician, but at the risk of her health, perhaps of her life;—therefore, the common boast of ignorant and unprincipled nurses, that they have “cheated the doctor,” betrays at once their dishonesty and total unfitness for the duties they are hired to perform. If every woman would decidedly and firmly oppose the impudent and dangerous practices of her nurse, when they run counter to medical counsel, we have every reason to believe it would not only abridge suffering, but also diminish the risk of parturition.

119. Let it not be hastily assumed, that there is more safety in following the directions of a nurse, than those of the physician, because she may have had some experience: for it must be quickly perceived, that the calculation is much in favour of the latter; for the nurse can attend but twelve patients per annum, while the physician may visit several hundreds, in the same period; besides, his knowledge of the laws of the human system, gives him a very decided superiority.

120. Our third direction (103) contains most important advice, and should be scrupulously complied with, if the woman wish to avoid inquisitorial tortures, or be enabled to render justice to her child. A neglect of the caution suggested in the article we are now commenting on, will almost certainly be followed by sore or tender nipples. When this happens, a series of evils constantly ensues. 1st, The mother suffers extreme pain, whenever she attempts the duty of suckling; this necessarily produces a great reluctance to apply the child to the breast: the period of its application is postponed from hour to hour, until the the painful distention of her breasts forces her to compliance. But in consequence of the accumulation of milk in the milk-vessels, they become over-distended, painful, or even

inflamed; so that, when the child is applied to the nipple, its attempt to empty the breast is attended with such severe pain, that the infant is almost instantly torn from it, leaving the part denuded of its skin, and, perhaps, covered with blood.

121. Secondly, In consequence of the extreme reluctance the mother feels to nursing her child under such circumstances, the breasts are imperfectly emptied, and the milk becomes, as it were, stagnant; or, at least, it undergoes such changes, as render it improper food for the child, and it also becomes impacted in the lactiferous vessels. Accumulations are formed, inflammation is excited, and milk abscess follows.

122. Thirdly, From the condition, in which the breasts are placed, by the unexhausted milk, the child is not only made to receive it of bad quality, but also, in an insufficient quantity; it, therefore, throws it up; almost as soon as swallowed; it is attacked with disordered bowels and colic, and soon becomes most miserably emaciated, when, perhaps, nothing but a fresh breast of milk can save it from an untimely grave. The evils we have here enumerated, are of frequent occurrence; and so certain are they to follow this condition of the nipples, that we declare we have rarely seen a well nourished child, under such circumstances.

123. It follows then, that, as a sound condition of the nipples is of the first consequence to the mother and child; and as it materially influences the future health of the latter, the consideration of the best mode of preserving them, properly belongs to our immediate subject.

CHAPTER IX.

OF THE TREATMENT OF THE NIPPLES.

124. In treating this subject, we shall first briefly inquire into the causes of sore nipples; and, secondly, point out the best mode, with which we are acquainted, for their prevention, and cure.

125. The removal of the skin which covers the nipple, by the application of the child's mouth in the act of sucking, is almost always owing to the milk-vessels being over-distended, and to an incipient inflammation besieging them in their course, and especially their extremities, which open on the extreme end of this organ; or sometimes to some of these little openings being nearly, or entirely obliterated by compression, or previous injury; thus requiring considerable, and repeated force, to extract the milk from them. The friction, which the nipples suffer, from the attempt to draw off the milk, soon renders these parts tender; and, in a short time more, the skin is entirely removed. From that moment, the woman bids adieu to all comfort, in suckling; for the child's frequent demands for nourishment, prevent their healing.

126. Now, it would seem from the premises just laid down, if we can prevent the over-distention, and inflammation of the milk-vessels, and remove the obstructions from their external extremities, we should destroy the necessity of that degree of force, which we have just declared to be the efficient cause of sore nipples; and, consequently, protect the woman against them. To do this, we must most rigorously enforce the rules we have laid down for the conduct of the woman immediately after delivery, and persevere in them until the necessity shall cease.

127. Besides this, the patient should begin to prepare these parts previously to labour, by the application of a young, but sufficiently strong puppy to the breast;* this should be immediately after the seventh month of pregnancy. By this plan the nipples become familiar to the drawing of the breasts; the skin of them becomes hardened and confirmed; the milk is more easily and regularly formed; and a destructive accumulation, and inflammation, is prevented.

128. A variety of washes have been recommended for the purpose of hardening the nipples; but, so far as we can learn, or have observed, they have rarely succeeded; nor can such washes

* We would not wish to be understood as considering the mouth of a pup better than that of a nurse, or one who is accustomed to this operation;—on the contrary, when practicable, we would prefer the latter, as she can always regulate the force necessary for this purpose. We merely recommend the pup, because it is more easily procured.

succeed often, from their very mode of action—for it is not so much an unusual tenderness of skin that gives rise to this complaint, as the degree of force which becomes necessary to extract the milk when these parts are over-distended, or inflamed. The true theory, then, of prevention is, so to manage the breasts, that neither over-distention, nor inflammation, shall take place. We have above suggested, the proper mode of doing this; namely, before delivery, by the regular application of the puppy; and, after delivery, by the early application of the child to the breast, and a strict antiphlogistic regimen.

129. Professor Oslander lays great stress upon the daily use of lukewarm water and fine soap; the nipples, he says, should be washed with them every day, for some time before delivery; by which means the hardened scarf skin, after a short time, can readily be removed by the finger, a blunt knife, or the edge of a card. When this is removed, he recommends hardening the tender nipple by certain stimulating applications; but of which we do not approve—the best plan, we believe, after washing, is to expose the nipples to the air for a few minutes at a time, and several times every day.

130. It, perhaps, may be useful to suggest, that these important parts are very frequently injured, by compressing them too tightly against the breasts, with corsets, &c. This should be guarded against with much care, by every female, whether she be married, or single; and for this purpose they should be protected, especially in the pregnant woman, by an opening in the jacket, corsets or stays, so as to leave them at perfect liberty.

131. Some women are so unfortunately organized, as to want the nipple altogether, or to have it very short, or sunken in—such may have the inconveniences, necessarily attached to this mal-formation remedied or improved, by the early use of the puppy, or the daily drawing them out with a large tobacco-pipe.*

* Mrs. ——— was confined with a fine healthy boy:—the secretion of milk was most plenty and favourable; but the child could not be made to take hold of the breast, as the nipples were inverted. The breasts became painful from extreme distention, as even the nurse who was well skilled in drawing-breasts, could not, without much difficulty, extract sufficient to take off distention. Much mischief was now threatening. Milk abscesses were to be feared; the child was obliged to have a wet nurse, and the pain the mother suffered from the breasts, was only relieved, by bleeding, purging, extremely spare diet, and the applica-

132. Our fourth rule (104) contains one of the most important injunctions we can give, or that the woman can receive; it forbids her to delegate to another, the duty of suckling her child—a duty rendered sacred both by nature and by reason—an employment, that awoke the poetic powers of a Tansillo, and aroused the eloquence of a Rosseau.

CHAPTER X.

OF THE MOTHER SUCKLING HER CHILD.

133. We shall consider this subject under several of its relation:—1st, that of duty; 2d, of pleasure; 3d, as it may affect the mother's health; 4th, as regards the health of the child; 5th, the consequences to both, when neglected; 6th, the alternatives for this neglect, and their effects.

SECT. I.—*As a Duty.*

134. God has declared almost in every part of his living creation, that the female, for a certain time, is the natural protector of her offspring; to the human female he has been particularly emphatic, by implanting in her affections, which are rarely subdued; and by giving her an organization most wonderfully fitted for the exercise of her best, and most enviable feelings. He has given her double means to furnish nourishment for her helpless young, lest accident should circumvent his kindest purpose; and he has so arranged their powers as to yield the wonted supply, as soon as that supply may be necessary.

135. Every woman feels, but all unfortunately do not obey, these powerful appeals—to the latter, and to the latter only, is

tion of hot vinegar; every thing, however, terminated favourably, by a rigid adherence to this plan. Upon the next occasion, a pup was procured, and the breasts were drawn several times every day; the nipples were now made to appear, as the breasts were not distended; this plan was pursued until after her delivery, and, by the time milk was formed, the child had very good nipples to take hold of.

it thought necessary to address arguments for the discharge of one of the most sacred of duties; and to make her, if possible, alive to her own interests and her own happiness.

136. We are truly happy to find, and equally so in this opportunity to declare, that the number of women who may stifle this strong maternal yearning, is comparatively small, and form only exceptions to the noble rule—and that it may ever continue to be so, we most devoutly pray. That such exceptions have always existed, our earliest records would seem to declare; and, that the example has never had but very limited influence, we are proud to admit—for, to the honour of human nature, such mothers have ever been the subject of the satirist's lash, and the object of the moralist's declamation.

137. By some, this neglect has been looked upon as absolutely criminal; and by Tansillo, no distinction is made between the woman who voluntarily procures abortion, and the one who abandons her child to the care of others, and leaves it to perish; for he asks—

“Does horror shake us, when the pregnant dame,
To spare her beauties, or to hide her shame,
Destroys, with impious rage, and arts accurst,
Her growing offspring, ere to life it burst—
And can we bear, on every slight pretence,
The kindred guilt that marks this dread offence?

* * * * *

She, who to her babe her breast denies,
The sentient mind, the living man destroys.”

The Nurse, translated by Roscoe, p. 11.

138. In such light is the mother's voluntary abandonment of her child viewed by a stern morality—we, however, do not regulate our opinion by so rigid a standard; for, we hold it right in this, as in every instance of imputed turpitude, to fix the grade of enormity by the *quo animo*; and, if this be made the test, as it certainly should be, it will be found much less flagrant than it would appear at first sight: for, we know, that but few mothers could be found, who would voluntarily consign their offspring to inevitable death; and we believe, when this cruel and unnatural repudiation takes place, it is generally owing to a temporary, but morbid suspension of the social, and moral perceptions, rather than to a destruction of them; and, were proper means judiciously

applied, they might be recalled, and the woman restored to a healthy, and natural state of feeling.

139. It should be made known to her who may feel a temptation to put away her child, from mere selfish gratification, that it has also been a subject of question, “whether the child which has been voluntarily abandoned by the mother to the care of others, should owe a tie, of either consanguinity, or of gratitude to her.” This doubt must be resolved by the mother herself—we shall not undertake to decide it, lest our feelings should betray a stronger bias, than should justly attach to the subject, from the hasty consideration we have given it.

140. It would not, however, be right to throw all the blame upon the mother, who does not suckle her child; the husband is sometimes so fashionably selfish; so unnaturally studious of his own ease, or comfort; and so ridiculously vain of his wife’s appearance, as to force a tender and affectionate mother from her duty; and this, sometimes, even to the sacrifice of her health, as well as that of his child. In this country, this character is much more rare than in Europe; and we sincerely hope, they may never increase, either by the contaminating influence of example, or by the destruction of social virtue.

141. In a political point of view, this subject may well merit consideration; for the pride of birth and of blood may, justly, take the alarm, if the theory of Tansillo have a foundation: for he asks—

“Why, ’midst the fellow tenants of the earth,
This high respect to ancestry and birth?
Avails it aught from whom the embryo sprung,
What noble blood sustained the imprison’d young,
If, when the day-beam first salutes his eyes,
His earliest wants a stranger breast supplies?
From different veins, a different nurture brings,
Pollutes with streams impure the vital springs,
Till every principle of nobler birth,
Unblemish’d honour and ingenuous worth,
Absorb’d and lost, he falsifies his kind,
A grovelling being, with a grovelling mind.”

The Nurse, p. 27.

SECT. II.—*As a Pleasure.*

142. If we can believe the *fond mother* upon this point, there is no earthly pleasure equal to that of suckling her child—and

if any reliance can be placed upon external signs, she is every way worthy of belief. This pleasure does not seem to be the mere exercise of social feeling while the mother is witnessing the delight of the little hungry urchin, as it seizes upon the breast—nor from the rapturous expression of its speaking eye, nor the writhing of its little body from excess of joy—but from a positive pleasure derived from the act itself; for most truly it may be said, when

“The starting beverage meets its thirsty lip,
'Tis joy to yield it, as 'tis joy to sip.”

The Nurse, p. 15.

143. Yet there are mothers, who voluntarily forego this pleasure, by committing their helpless offspring to mercenary nurses; or who fail not to mar it, by degrading this delightful act to a task by reducing the periods for its performance to rule; and even this rule, regulated by selfishness, rather than by the demands of their beseeching infant—but in yielding thus to sinister feelings, may it not be justly considered a moot point, whether such a woman should be most pitied, or despised? for she may well be asked, if, by this neglect,

“She can hope to prove
More bliss from selfish joys, than social love?”

In part, even a father, upon such occasions, knows how to feel a mother's joy, or an infant's bliss; nor would he yield them, for any price.

SECT. III.—*As it may affect the Mother's Health.*

144. Nature here pleads her own cause, by creating, and even perpetuating disease in the mother, who may refuse this justice to her child—she becomes liable to milk abscess in its worst form; to translations to various parts of the body; to congestions in the milk glands, which may become schirri, or even cancers. We have known in several instances long-protracted headaches to follow this unnatural abandonment of the child, which nothing but time seemed capable of relieving. One case, in particular, may be worthy of relation, as it is every way in point—Mrs. —, the mother of several children, was severely afflicted

with headach, sore eyes, and a long train of nervous symptoms, which rendered her life miserable, and for which almost every remedy had been tried in vain.

145. We attended her for these complaints at the desire of a friend; but as she was pretty far advanced in her fifth pregnancy, we could neither hope nor promise to do much for her relief at that time; we, however, commenced a very particular inquiry into the origin and progress of her disease. From this we learned that these unpleasant symptoms attacked her soon after her first confinement; and they seemed to gain ground, after each of these events, until they became almost insupportable.

146. Immediately after each confinement, and for a short period in the month, she would experience a slight relief; but by the time her month was up, it would return with renewed force, and would leave her but at rare intervals, even for an hour. We next inquired into her habit as regarded nursing her children; and understood that she had never suckled one of them; having lost her first a few days after its birth, she dried up her milk, and was soon after attacked with the complaints just mentioned. But so far from either herself or her friends attaching any blame to the sudden repulsion of the milk, that she was forbidden by her husband, her friends, and her physician, from ever attempting this office, as she had become so extremely debilitated, in their apprehension, as to render even the attempt dangerous—accordingly, a wet nurse was always procured beforehand; and the mother's milk, as before, was prevented from taking its course.

147. From this account, as well as from a variety of other details not necessary to mention, we were at once instructed in the nature of her disease—for it was nothing more than a plethora arising from repelled milk; for the cure of which, we proposed she should nurse the child she was then pregnant with, and to follow such farther directions as the necessities of the moment might suggest—this was agreed upon. In due time, she was delivered of a small, but apparently healthy child—the child was early put to the breast in conformity with our practice; strict attention was paid to the mother, as regarded regimen, &c., during the month. Milk was plentifully secreted in proper time; the child thrived; and the lady never had a return of headach; her eyes became strong and perfectly sound, and

the whole train of nervous symptoms vanished, to return no more. These are not the only advantages of this plan—we are of opinion that the risk of child-bed fever is much diminished, by the mother suckling her child—for the consent or sympathy between the uterus and breasts is well known; and had not escaped the observation of the sagacious Hippocrates, two thousand years ago.

148. This case is replete with instruction to the mother, who may voluntarily abandon her infant, by showing, that a severe and protracted disease may follow what she might look upon as a safe expedient; it is full of practical importance to the physician, who may be tempted to disregard the consequences of “repelled milk.” But though confessedly important, it is neither new, nor rare—for unnatural mothers, “over-tender, and fashionable husbands,” and inexperienced physicians, have ever existed. Tansillo, whom we have already so often quoted, was one of the over-tender, and fashionable husbands;” and laments in a strain of beautiful pathos, his error on this subject in the following words; after having just before described the evils which this practice might give rise to, he says—

“Nor think your poet feigns. Alas! too well
By dear experience I the truth can tell;
In dread suspense, a year’s long circuit kept,
And seven sad months I trembled and I wept,
Whilst a lov’d consort pressed the couch of wo,
And death oft aim’d the oft averted blow.
Nor hers the fault—misled by fashion’s song,
’Twas I deprived the mother of her young;
Mine was the blame, and I, too, shared the smart,
Drain’d was my purse, and anguish wrung my heart.”

149. It may be asked is every woman capable of nursing her child? To this we must answer, No: and when we declare it to be the duty of every mother to do so, it is to be understood only as referring to every mother who is capable of this important office. We are aware there are causes which will render this attempt neither obligatory, nor even proper; but such cases should be carefully distinguished; and should only be considered such, when they have the sanction of an experienced physician—neither the want of inclination to fulfil one of the most important duties of female life; nor the specious pretext of feeble,

or ill health, should ever be admitted as sufficient reasons for such dereliction.

150. To the intelligent practitioner, these pretexts are of easy detection; and, to render it within the capacity of any one, he need but recollect the consequences of the judgment of Solomon, upon (we had like to have said) a similar occasion. The proposition to separate the child from the feeling mother is heard, as if it were her death knell; but by the selfish and unfeeling one, is received with decided approbation, if not with joy. Of the causes which would render it improper for the woman to suckle her child, we shall have occasion to speak under the head of "food."

SECT. IV.—*As it may affect the Child.*

151. As we hold it to be an indispensable duty on the part of the mother to suckle her child, so nothing but the most satisfactory evidence of incapacity, or of bad milk, should be admitted, as a reason for its neglect—but as such satisfactory evidence must necessarily sometimes exist, it follows, that the child must become an alien to its mother's bosom. In such a case, it is the exception and not the rule that is acted upon.

152. The arrangement made for the nourishment of the child by the secretion of milk, declares, as we have already said, a mother's duties towards it; it also forces upon us the truth, that none other can be so entirely proper as that which she is destined to furnish. If this be true, as it unquestionably is, it follows as a consequence, that the child must incur a greater or less risk whenever it is deprived of it, either by choice or by necessity; it is, therefore, proper that we consider the nature of that risk.

153. The injuries which a child may receive when condemned to the care of a hireling, may be of two kinds; namely, I. Physical, and, II. Moral.

CHAPTER XI.

I. OF THE PHYSICAL INJURIES.

These may be inflicted upon the child by a deficiency of milk; by its bad quality; by a just and proper care not being paid to its many necessities; by the selfishness of the nurse; and by the propagation of an actual, or an occult disease.

SECT. I.—*By a Deficiency of Milk.*

154. As there cannot be any absolute security against imposition from that class of females who hire themselves for wet nurses, there must be a constant liability to be deceived. For, as a matter of course, they will answer questions in such a manner as will give the best chance to be engaged; they will therefore declare they have the greatest abundance of milk, and will offer, perhaps, in proof of it, a fully distended breast—you receive them under such appearances; and your child for the first, and perhaps last time, receives a sufficient supply.

155. For, upon subsequent applications of the child to the breast, it is obliged to put up with meagre fare—the woman, aware the deception she has practised will be discovered without the exercise of both cunning and address, has immediate recourse to clandestine feeling; and that, perhaps, of the most varied, and improper kind. Under such management, the child soon becomes pained and fretful, from a deficient and improper diet; but the fears of the mother are for awhile appeased, by the nurse declaring it to be the “colic” attendant upon a change of milk. Things proceed pretty much after this fashion for some time longer; and though the child cries less, and sleeps a great deal, it does not thrive!—but, on the contrary, there is a great falling off, and, perhaps, a severe diarrhœa is added—the mother now takes the alarm; and her physician is consulted. From the history given, he suspects the true cause of the child’s diminished health—an inquiry is instituted, and it eventuates in the discovery, that the nurse has not sufficient milk, and that the child has been quieted, and apparently satisfied, by the regular exhi-

bition of *laudanum*!! This is not “fancy’s sketch”—it is drawn from the life.

SECT. II.—*From Milk of a Bad Quality.*

156. The healthy quality of milk may be destroyed, or impaired sometimes without its quantity being very sensibly diminished; and though the child may receive abundance, it may not be sufficiently nourished. When this happens, we find the child rejecting the milk soon after it is received; or it passes with rapidity and pain through the bowels. If the diapers be examined, the evacuations will be found copious and watery; offensive in smell; of a light green colour, and mixed with a portion of undigested milk curd. These discharges may not be very frequent; yet so large, as rapidly to weaken the child; a proof, that but a small proportion of the milk received, had been converted into nourishment.

157. The child becomes uneasy, fretful, and very frequently disturbed in its sleep; it suddenly cries as if in violent pain, and again falls into unrefreshing slumbers. It becomes pale; its flesh is flabby; and after a short continuance in this state, emaciates suddenly and becomes alarmingly ill from diseased bowels, or disordered head.

158. There are many causes which may give rise to this bad state of the milk—improper diet; a deranged state of the stomach; the too free use of ardent or acescent drinks; bad organization of the breasts themselves; too great age of the milk; the regular returns of the catamenia, &c. &c.

SECT. III.—*A Want of due Care to the various Necessities of the Child.*

159. It truly requires all the affections of even a *fond mother*, to administer duly to the numerous wants of a young child—we mean here only such wants, as are really essential to its health, and comfort, and not those of an artificial kind, which a fastidious, and capricious taste may quickly create. The cares essential to the comfort of the child, consist, in the proper and regular application of it to the breast, that it need not suffer from hunger, or be injured by too long abstinence; in a proper, and

due attention to cleanliness; and in the establishment of regular, and useful habits, as regards exercise, exposure, sleep and evacuations.

160. It will readily be admitted, that the proper discharge of these essential points requires more affection for the child, and a higher sense of duty, than can generally be found united in a wet nurse; and it also follows, if they are all, or even in part neglected, that the child must suffer.

SECT. IV.—*From the Selfishness of the Nurse.*

161. Mothers who are fondly attached to their children, are fully aware of the many privations they are obliged to submit to, while they continue to be nurses; and they but too often feel that it requires “all a mother’s love,” to perform the various duties of one without complaining, or feeling “the task, severe.” It must not then be a matter of surprise, that the hireling becomes restive, and negligent, under the discharge of her multiplied cares; and the child suffers in consequence.

162. This selfishness, however, may exist in different degrees; and the child will suffer, of course, in proportion to the neglect it may experience. One of the most common causes of neglect, is, where the duty to the child interferes with the engagements of the nurse, and thus interrupts the consummation of anticipated pleasures. Should this happen several times in pretty quick succession, she becomes soured, and will contrive that it shall not happen soon again.

163. Nurses generally make a point to have a certain period of the day at their command; and should they find this hour repeatedly interfered with by the wakefulness of the child, they will soon have recourse to such means as shall prevent its future recurrence. We have known a number of cases where laudanum was administered for this purpose, with so much cunning, as to elude detection for a long time, even after the suspicion had been excited. In one of these instances, the wily nurse boasted to the abused parent, of her good management, in establishing so much regularity in the child’s sleeping.

164. When a nurse is determined to employ laudanum for sinister purposes, she may do it for a long time before she may be

detected, notwithstanding the vigilance of an anxious mother. There are moments, when she must be alone with the child; and there are stratagems, by which her purpose is effected, of which the parent never dreamed. One of the most remarkable of this kind we have met with, we will relate. Mrs. — requested us to visit her infant of nine months old, which, without any apparent indisposition, had slept unusually long, and unusually sound, for two or three days. When we arrived, the child was still asleep; we sat by the side of its cradle for some time, in order to observe any phenomena that might present themselves. The character of the sleep was marked by that peculiarity which a practised eye, and ear, immediately ascribes to opium; and we accordingly declared it to be our opinion, that the child had taken a quantity of this drug.

165. Both mother and nurse protested in the most positive manner, that it had not taken a particle of that medicine in any form whatever—we were equally positive it had; and directed our curative plan upon this belief. Upon our next visit, the child was much relieved—it had vomited freely, and had kept a considerable quantity of rich lemonade upon its stomach, which seemed to control the influence of the (as we supposed,) laudanum.

166. Before we left the house, we reiterated our suspicions to the mother—she, as before, was very certain, it had taken no laudanum; and urged in support of this belief, that the nurse never had been left alone with the child for a single instant; for when she was about to leave it herself, she was sure to place a young woman in the room, in whom she had the most entire confidence; and this young woman had assured her, in the most solemn manner, that she never saw her give the child any thing whatever, with the exception of the breast. We, however, did not give up our first opinion, and proposed to the mother, when the nurse was asleep, to make an examination of her pockets; in one of which we were sure a bottle of laudanum would be found. At our visit the next morning, we were told by the mother with tears in her eyes, that a vial of laudanum, as we had suspected, was found in a little pocket within the other pocket, and which was made for the express purpose of holding it. Though the laudanum was found as just stated, the manner of its exhibition was still a mystery, especially, as we were con-

vinced, from what Mrs. — herself said, as well as the declarations of the young woman, that the nurse had never been left alone, even for a moment, with the child. It was, however, now certain in all our minds, that it had been given, by some stratagem or other; and, with the hope of detecting the method, we inquired of the young woman, whether she had ever seen her make any applications to her nipples, for any purpose, or under any pretext whatever? She said she had; she had seen her apply the mouth of a phial containing the tincture of myrrh to her nipples, every day, for the purpose as she, the nurse, had said, of hardening them. The mystery was now explained—it was laudanum, and not the tincture of myrrh which had been thus ingeniously applied; and by permitting it to dry from time to time, a sufficient quantity of opium was accumulated upon the nipple, to cause the deep sleep in which the child was found.

This nurse had been permitted to visit her own child, every afternoon, when the nurse-child was not awake to require her attention; she, accordingly, procured a regular sleep at this time of day by the aid of laudanum, that she might get abroad with certainty.

167. The selfishness of a nurse may show itself in other ways; namely, by eating and drinking such articles as she knows will disturb the stomach and bowels of the child, but has not sufficient feeling to give up the gratification of her own appetite for its benefit. The child becomes tormented by colic, or other affections, which are only relieved, by repeated doses of laudanum, until a habit is created, which it is almost impossible to break—the consequences of such conduct are well known to every body.

168. Again, the life of the child may be forfeited, in case of its illness, by the too free indulgence of the nurse's appetite—in many instances it is of vital importance that the quality of the milk should be altered by a change of diet imposed upon the nurse—but will the selfish woman conform rigidly to the instructions of the physician for this purpose? Tansillo decides that she will not:—

“Sick, pale and languid, when your infant's moans,
Speak its soft sufferings in pathetic tones,
When nature asks a purer lymph, subdued,
By needful physic, and a temperate food;

Say, will the nurse her wonted banquet spare,
 And for your infant stoop to humbler fare?
 Or with her pamper'd appetite at strife,
 One portion swallow to preserve its life?
 Self her sole object—interest all her trade,
 And more perverse the more you want her aid.”

The Nurse, p. 51.

169. But, perhaps, nothing displays the selfishness of the nurse in such strong relief, as the tyranny with which she attempts to govern the whole house—every body, and every thing, is laid under contribution, that her wayward pleasures may be gratified—if she frown, is sullen, angry, or capricious, every thing must be yielded, that her perturbed spirit may be appeased; and her demands increase in proportion, as they may have been gratified.

SECT. V.—*By the Propagation of an active, or occult Disease.*

170. We have had many opportunities of witnessing injuries, arising from this cause, when it was too late to prevent them; nor could they have been detected at the proper moment, whatever may have been the skill of the physician, or the vigilance of the parent. Diseases of the skin, as the itch, perhaps tetter, have been so frequently propagated, as to become familiar to the observation of every body; and in two instances, we had the immediate care of those, who had received from the nurse, the most loathsome and horrible of all diseases, it was communicated not only to the children, who were at the breast, but also to four older ones.

171. These cases are not so rare as we might hope; especially on the continent of Europe. They are more rare in great Britain, and still more rare in this country. Rosenstein, in his treatise on the diseases of children, relates, that in a respectable family in Stockholm, the father, the mother, three children, the maid-servant, and two clerks, were infected with the venereal disease, by a nurse who was admitted into the family without previous inquiry into her character.

172. How far this last disease may be communicated by merely drawing the milk of a woman who may have it in a secondary form, we are not exactly prepared to say, from our own experience—there is much *testimony* in favour of such a transfer; but

there is much *reasoning* against it: yet there is one concession all will be willing to make—namely, that there is a risk in employing a nurse so circumstanced.

CHAPTER XII.

OF MORAL INJURIES.

173. The moral influence the nurse may have upon the child, every body is aware of; the parent may attribute to her, almost whatever the child may become in after life. On this account, the moral habits of the nurse, are almost paramount to her capacity to afford the proper nourishment—the hero, and the poltroon; the liar, and the man of truth; the timid; and the daring; the superstitious, and the rational; the modest, and the presuming; the amiable, and the froward; the humble, and the arrogant; the passive, and the active—all have received the first impulse of character in the nursery.

174. Baldini, as quoted by Struve, relates the case of a little girl of seven years old, who had an irresistible desire to drink brandy, which she had contracted by drawing the breasts of a nurse, who was an habitual tippler. If this be so, more faith may be given to the story of Nero, and his nurse, than is commonly bestowed upon it.

CHAPTER XIII.

OF DRESSING, &c., THE CHILD.

175. Our fifth direction (105) recommends, that a mother should pay attention to the washing, dressing, and undressing of

her child. This advice, at first sight, might appear to be imposing upon her a task of great labour; but it is not so—and if it were even much more so than it is really found to be, it should, nevertheless, be considered as one belonging to her. She need not do the mechanical part of this important operation; but she should never withdraw her eye from her child, while it is performing. The operation of dressing properly consists, in the washing, and putting on the clothes of the child—and, first,

SECT. I.—*Of Washing.*

176. There must necessarily be a period at which the mother's absolute presence cannot be expected at the washing of her child; but there is none at which she cannot make her wishes known upon this point of discipline. But as young mothers are rarely well instructed upon this point, we shall offer a few rules, which she can either adopt in their full extent, or so modify, as may best suit her particular case, or as future experience may suggest.

177. The object of washing, is, to remove from the surface of the body all impurities it may have contracted, either visible, or invisible, by the aid of water and of soap.

178. A newly-born babe has always attached to its surface, an impurity which it brings with it from its mother's womb; this substance most resembles an imperfect soft fat; it is very tenacious, and oftentimes is of very difficult removal. A question has arisen, whether this should be removed? A certain German Professor, some years ago, insisted it should be let alone, as it would in the course of a few days become dry, and peel off spontaneously—this is strictly true; but does this fact prove the propriety of permitting it to remain on the surface of the body? Certainly, it does not; and for the following reasons—

179. 1st, When this substance has not been cleansed from the body, either from careless washing, or from the difficulty found in its removal, it has always produced a very disagreeable smell.

180. 2d, When it has been suffered to remain from any cause, it has hardened itself so much, as to give pain from its mechanical irritation.

181. 3d, When it has been suffered to dry, it has remained in some instances so long, as to leave the surface under it, so se-

verely excoriated, as to require particular attention, for some days.

182. For these reasons, we are persuaded, it is highly proper, that this substance should be removed from the body of the child as completely as possible at the first washing. It is, also, proper, to point out the best mode of doing this. Every part of the child should be smeared with fine hog's lard, before water is applied. This being done, the child should then be carefully washed with *lukewarm water, and fine soap*. The nurse will be much aided in this operation, if she employ a piece of fine flannel, or sponge, instead of linen, or cotton rag; as the former will detach the offensive substance much more readily than the latter.

183. Great care should be taken to remove this substance from every fold of the skin, and especially from the joints, groins, armpits, &c., that excoriations may not follow from the omission.

184. We italicized the words, "*lukewarm water and fine soap*," that we might give our opinions upon each of these means—and, first, of lukewarm water. We have ever held it proper to use the water a little warmed for new-born children, as the application of cold water is, in our opinion, too severe. Let it be recollected, that the child has been suddenly removed from a temperature of at least 98° of Fahrenheit's thermometer, to one almost at all times lower; and very often very much lower; and that this transition has a very powerful effect upon its nervous, its muscular, and its sanguiferous systems. The first is known by the suddenness and the violence of its cries; the second, by the very powerful contractions and relaxations of its little limbs and body; and the third, by the rapidity of its circulation.

185. It must also be kept in mind, that warmth is a *sine quâ non* to a newly born child; for the heat it brings with it into the world, is nothing but the heat of communication; or, in other words, that which it derives from its mother; and would be very quickly dissipated, if not carefully cherished by external means. For, to acquire heat of its own, if we may so term it, requires a free use of its lungs, and the complete establishment of its circulation, for some time. Then, why should its little sum of warmth be wasted in conformity to an hypothesis? for, it is nothing more, when cold water is used, with a view "to make the child strong." And we will now ask, for the sake of information, can any one reason be given why a child should acquire strength

by the use of cold water? We shall have occasion to advert again to this subject.

186. We have repeatedly seen it require the lapse of several hours, before reaction could establish itself,"* during which time, the pale and sunken cheeks, and the livid lips, declared the almost exhausted state of its excitability. We are persuaded we have known death itself to follow the use of cold water, for the first washing of the child. It is true, in these instances, the children were born feeble, and required but little of improper management to destroy them; but, at the same time, it should be recollected, had their little powers been well husbanded, they might have been restored to good and perfect health.

187. Rousseau condemns the application of warm water to even the new-born child; or, at least, he says, "Warming the water may be as well dispensed with: as among many different people the children are taken immediately after their birth and bathed in the river or sea." This appears to us an act of necessity, rather than of choice; since few, we believe, do this, but people in savage life, where, from their erratic habits, few opportunities are offered for this kind of ceremony. Indeed, a people of this kind, rarely have the conveniences for the purpose of heating water; therefore, a necessity must not be mistaken for a wise speculation on future good health. But, if this were even strictly true, what does it prove? Is there any evidence that the children thus treated are of better health than those managed in the opposite mode? There is no such evidence; for, were it even proved that the health of a people who, from birth, used cold water, was better, than those washed with warm, we might justly doubt whether this increase of health depended upon this circumstance alone.

188. Indeed, Rousseau himself seemed to answer this question in the negative, since, he attached so much consequence to a country life, to uniform employment in the open air, to a free, and active exercise of the body in the various duties of the hunter, the shepherd, and the farmer.

* I was informed, within a few days, by an experienced nurse, that, upon one occasion, where it was insisted on by the father that the child should be washed in cold water, that the little creature did not recover its warmth for twenty-four hours, though every expedient was employed for this purpose—the washing with cold water was not repeated, of course.

189. We have every reason to believe that catarrhal affections have been produced by the use of cold water, especially in very young children, from which the poor little creatures have escaped with much difficulty. Now, as serious evils may arise from ablutions of cold water, and as we have never heard it even suggested that immediate injury has followed the use of warm, the line of conduct to be pursued would seem to be very easy to make choice of.

190. Some, with a view to improve the quality of the water, add brandy or other liquors to it; or, if they do not mingle these with the water, they very carefully wash the infant's head with some one of them, for the purpose, they say, of strengthening it. This practice, though not so extensively injurious as the one just spoken of, is nevertheless decidedly improper. There cannot be any possible necessity for thus violently stimulating the poor babe—thus do they “banish simplicity from even dressing a new-born child.”

191. And, 2d, of “fine soap;” this direction should be carefully obeyed: a neglect of it is sometimes attended by great injury to the child. There is a brown, and highly stimulating soap in common use, called “rosin soap,” because this substance enters very largely into its composition; this, if applied in strong solution to the tender skin of a new-born child, will very frequently abrade the cuticle to a very large extent; it should, therefore, never be employed. It is better to wash the child with plain warm water, than have recourse to this soap.

192. During the whole process of washing, the child should be exposed as little as possible to a current of air; and, if the weather be cold, it should be dressed near the fire.

SECT. II.—*Of the Dress of the Child.*

193. The dress of the child should always be made subservient to comfort. If this rule be acted upon, it will be found to consist, 1st, in such arrangements of it, as shall sufficiently protect it against cold; and, 2d, to ensure it against all inconvenient, and injurious pressure and restraint, as well as producing too much heat; therefore, the cruel practice of swaddling should be for ever laid aside.

194. For this absurd practice, it would perhaps be difficult to

assign a reason; it probably, however, arose from the inroads made by rickets upon the proper form of the human limbs—mistaking the effect of disease for a defect of nature; and thus applying a partial remedy for the morbid condition of the whole constitution. In times of ignorance, when the care of women was entirely confided to females, this injurious practice may have originated in a false theory; and it was certainly perpetuated by the designing midwife. For, though every child was not born with a disposition to rickets, yet it is probable that these selfish women persuaded their patients, that the limbs of all children would become so, if not guarded against by proper management. This opinion seems in part confirmed, by this practice being in a degree abolished, as soon as midwifery became generally practised by men; for we never hear of an accoucheur performing this terrible ceremony for the poor child.

195. Buffon says, “with us (in France) an infant no sooner leaves the womb of its mother, and has hardly enjoyed the liberty of moving and stretching its limbs, than it is clapped again into confinement. It is swathed, its head is fixed, its legs are stretched out at full length, and its arms placed straight down by the side of its body. In this manner it is bound tight with clothes and bandages, so that it cannot stir a limb: indeed, it is fortunate that the poor thing is not muffled up so as to be unable to breathe; or, if so much precaution be taken as to lay it on its side, in order that the fluid excretions, voided at the mouth, may descend of themselves; for the helpless infant is not at liberty to turn its head to facilitate the discharge.”*

196. Can any thing be running so entirely counter to the dictates of nature? Let us consider the poor infant folded up in the smallest convenient form in its mother’s womb, for the period of nine months; and then let us watch its movements as soon as it is free; and we shall at once be convinced, by the stretching of its little limbs in every direction, how much it enjoys its liberty.

197. Analogous to the unnatural restraint imposed upon the limbs by bandages, we may reckon on the common practice of even the present day, of pinning the ends of its garments close up to the feet of the child; thus preventing all movements of its

* Hist. Nat. tom. iv. 190, 12mo.

limbs. This should be guarded against, by the mother forbidding the nurse to dress the child after this fashion. If the ends of the clothes must be turned up, let sufficient room be given, for the exercise of the child's limbs. In the same way, all motion is prevented to the arms by their being confined by a napkin, when the child is laid down; this is done under the specious pretext of preventing the child from scratching itself with its nails, as it cannot command the direction of its hands.

198. It would be useful to the poor infant to have the use of its limbs, even at the expense of an occasional scratch from its own nails; since, by their exercise, they would become strengthened, and, in a short time, the child would learn to direct them properly by a gradually increasing experience. We would, therefore, forbid every restraint to the motion of the limbs, body, and neck of the child; and thus permit them to exercise their little muscles in any direction or degree they might choose. In cold weather, the arms may be covered to encourage warmth, but they should never be fixed down.

199. It is to this freedom of the limbs, that the child is indebted for its increase of strength, and its eventual power to walk; and to it does it owe the preservation of the due vigour of the antagonizing muscles. For when but one set of muscles is employed, the antagonizing set become weakened; and, if too long persevered in, sometimes even useless. We once saw a child, who had been made to nurse itself almost from its birth, lose the power of the extensor muscles of the legs, by its being obliged to sit for many hours together in one spot upon a hard floor. This child could never stretch its legs sufficiently straight to learn to walk, and died a cripple at the age of seven years.

200. Proper attention has rarely been paid, either to the materials, or the form of the articles of clothing, for a new-born child. They have, generally, been made of the same kind of stuff, whether the child be born in winter or in summer—this surely cannot be required. In general, however, the error has been on the safer side; for, if the child have suffered, it has rather been from an unnecessary, than from a deficient quantity of clothing. But errors of every kind should be removed when practicable; therefore, we would not have more clothing heaped upon the child than shall be necessary to protect it against the existing cold.

201. This adjustment, however, requires much care, and should be effected by those of good judgment, though not precisely for the reasons assigned by Dr. Buchan, who says,* that "every child has some degree of fever after birth; and, if it be loaded with too many clothes, the fever must be increased often to such a degree, from the concurrence of other causes of heat, as to endanger the life of the child. Even though no fever should be excited, the greatest debility must be the consequence of keeping the child in a state of perpetual waste by excessive perspiration. Besides, in such a condition, the child is liable to catch cold upon exposure to the least breath of air; and its lungs, relaxed by heat, and never sufficiently expanded, are apt to remain weak and flaccid for life, so that every cold will have the most alarming tendency, and probably terminate in asthma or a consumption."

202. The Dr. has really drawn a frightful picture, of the effects of too much clothing upon a young child; but it is one, we cannot recognise from experience, nor acknowledge from theory. We admit, that should the child be so abundantly clothed, as to keep it in a constant state of perspiration, there might be a risk of its catching cold upon exposure, or much weakened. But we are of opinion, if mothers should take the alarm from this representation, they might do much worse, by running into the contrary extreme; and Dr. Buchan himself would confess, too thin clothing might be attended with worse consequences than too thick. Besides, we do not agree with the Dr. in the premises he starts with, namely, that "every child has some degree of fever after the birth."

203. We should be very careful how we admit this position, as it would lead to very wrong practice. That a new-born child, like another individual, might have fever as an accidental circumstance, we admit; but, as a necessary consequence of its birth, we deny—first, because it would seem an extraordinary arrangement of nature, that every child should be ushered into existence in a state of disease; for fever is disease; and a disease of a formidable kind; 2d, we have never witnessed this, as a sequence of birth. Therefore, withholding a sufficiency of clothing, with a view to counteract, or to not augment an imaginary disease, would, to say the least, be idle.

* Advice to Mothers, p. 110.

204. That new-born children may be improperly dressed, and improperly managed after they are dressed, we believe, nay, know; but the state of perspiration which the Dr. so much dreads, is owing, we believe, almost always, in cold weather, to their being placed under too many bed clothes. On this account, we would caution against both extremes; but not because the child has fever; nor from an apprehension of the evils which are supposed to follow a state of perspiration. As this is a matter of consequence, as every truth is that is connected with the welfare of infants, we shall say a few words upon the supposed consequences of this over-dressing.

205. The doctor says the child is "liable to catch cold upon exposure to the least breath of air;" this is admitted, if the child be in a state of perspiration, and be improperly exposed; but this would be the case, did the perspiration proceed from an over quantity of bed clothes; and as it would be important to determine from which of these sources the evil proceeded, it would be well to give it a fair investigation; and to ascertain, if possible, to which of the causes the error belongs. Therefore, should the child be moist, though exposed to the air, it might justly be attributed to a solution of fever; but if it only perspired when closely covered, we would be certain it proceeded from an excess of clothing. We have, however, considered it sufficiently difficult in most cases to excite perspiration upon the skin of a new-born child, by almost any means; and for this plain reason—it is some time before the vessels upon the surface become sufficiently active, and filled, or the circulation sufficiently powerful to produce this effect. Examine the skin of a new-born child, and you will find it almost constantly cold, unless well protected by clothing made of materials which are bad conductors of heat—and hence the absolute necessity of maintaining this condition by suitable means.

206. The Dr. also says, that "the child's lungs are relaxed by heat!" If this be so, how is it possible to prevent it?—If heat be improper to the lungs, all animals that have hot blood, must be precisely in the same situation! for the Dr. would not deny that warmth is essential to the existence of man; and if this be so, the lungs, like every other internal part, must have an equal temperature, and no more; now, how a temperature, which scarcely varies a degree at any season of the year, and

which is natural to the human body, and inseparable from it in the living state, shall produce relaxation of the lungs, we cannot possibly understand.

207. He farther states, "they (the lungs) are never sufficiently expanded, and are apt to remain flaccid for life." We would ask, why the lungs are never sufficiently expanded? Because the lungs are relaxed by heat, we suppose must be the answer from the premises! Now, it would seem from this, that our notions upon the expansion of the lungs must have been wrong, since heat is unfavourable to it, by producing relaxation of them. We have often heard of, and we believe we have seen, the sudden application of cold, interrupt the full expansion of these bodies; but we have to learn, that heat does so, by producing relaxation in them. To our mind, this relaxation, if it exist, should favour expansion, since it implies less resistance.

208. In winter, or even in cool weather, flannel must form a part of the child's clothing; especially their little shirts, and petticoats; but this should be of such fineness, as not to oppress either by its weight or its thickness. It should always be of the white kind, where the circumstances of the parents will permit it—not that the first cost of the white need be greater than that of the coloured, but because it will, for the sake of the eye, require to be more frequently changed, as it will more readily show any dirt that may attach to it; but for this very reason, it should be employed, whenever it be practicable. Another reason may also be assigned; the white can always be procured of a finer quality, which sometimes is desirable.

209. There is a very common error upon the subject of flannel, which deserves to be corrected; namely, that it can remain longer dirty without doing mischief by its filth, than any other substance; but in this there is no truth—flannel, from its very texture, is capable of absorbing a great deal of fluid, which it will retain so long, if permitted, as to allow a fermentative process to go on, and give rise to the extrication of some deleterious gases; therefore, flannel should not be worn even so long, on this very account, as linen substances. The principal advantage in the use of flannel is, its non-conducting property of sensible heat—it is, therefore, well calculated to protect the body against the too rapid escape of this important fluid.

210. Agreeably to these views, flannel should be used when-

ever it will be proper to accumulate heat, by preventing its too rapid dissipation from the body ; it should, therefore, be employed precisely in the proportion that these ends require. But it will be readily seen, that no precise quantity can be directed ; since the degree of necessity will be constantly varying as temperature may alter, or as constitution and period of life, may change. As a general rule, it may, however, be observed, that the younger the child is, the more of this article is required ; but it should never be in such quantity, as to create a vapour bath.

211. There is another operation of flannel, that is highly valuable, especially, in this variable climate ; and its agency in this respect, may be considered as one of almost indispensable necessity—it is its protecting power against sudden reductions of temperature. By virtue of its non-conducting power, the system is saved from a prodigious expense of caloric, or heat, at a time when its sudden escape might be attended with effects of the most serious kind—the advantages of flannel in this respect are familiar to every one ; for every body adopts the practice, without exactly understanding the principle on which it is founded. Again, it powerfully guards the body against the cooling effects of evaporation, when in a state of perspiration ; and by preventing its too sudden escape, it keeps a considerable portion of heat constantly applied to the surface of the skin, by means of this vapour ; and thus hinders it from leaving the body too suddenly.

212. Flannel may also be regarded as a very pleasant and extensive “flesh-brush ;” by constantly giving to the skin a gentle and an agreeable irritation. By this means the insensible perspiration is freely maintained ; while all the evils arising from a check of the sensible, are very much guarded against.

213. It must nevertheless be admitted, that the utility of flannel has its limits ; and beyond which its employment should not be urged. Flannel may be improper, 1st, where it excites too much perspiration, as in young children, sometimes, during the extreme heats of our summers—when this is observed, it should be removed, and a similar garment of muslin, or even linen, should be substituted. The flannel should, however, be immediately replaced, whenever an alteration in temperature may render this proper. Indeed, the only proper direction that can be given for the dressing of the children during our summers, is to

vary the clothing with the variations of the thermometer. This, it is true, may occasion some additional trouble to the parent; but the observance of it, it should be remembered, gives additional security to the health of the child; for we are entirely convinced, that very young children suffer extremely, and are sometimes even rendered ill, by their bodies being too much loaded with flannel.

214. 2d, Flannel may also be improper, from idiosyncrasy—this should be carefully attended to; as the child has been known occasionally to suffer much from this peculiarity. It may readily be detected, by the child almost constantly expressing uneasiness, without any obvious cause; and by an efflorescence spreading itself over the body, which immediately disappears so soon as the flannel is removed.

215. 3d, Flannel may also be improper, during a febrile condition of the system; it should, therefore, always be removed, when it may be desirable to lower the temperature of the skin. We are well aware, that this will appear extraordinary advice to many; and there may be even strong prejudices against the practice. But we fear no reproach upon this head; as it has been justified, a hundred times, in our own practice. The fear of “catching cold,” as it is called, should not prevail against it, since you cannot engraft a slighter disease, upon a stronger.*—

SECT. III.—*Of the Belly Band.*

216. This useful appendage to the child's dress, should be of flannel; but it should be made single; it should be worn, until the child is at least four months old; or even for a longer period,

* It may not be amiss to suggest, not only the utility, but the absolute luxury to the child, of friction upon its abdomen, with the bare warm hand, for a minute or two every time it is dressed. This exercise is so grateful to the child, that it never fails to express its delight, by its smiles, cooings, and the stretching of its limbs. We would, therefore, always recommend this practice, since it not only delights the child, but also promotes the healthy action of its bowels.

In summer, flannel is frequently found to be oppressive, as well as irritating. In such cases, we have lately found silk shirts to be highly grateful as well as useful. We would, therefore, recommend its employment in all instances in which the flannel is found to disagree, or where it is thought to be ineligible. The substance, known by the people of trade under the name of *Cancon*, is excellently well adapted for the purposes here proposed.

if the child be feeble, or has a tendency to umbilical hernia. This article is of great importance, and should never be omitted; but care is required in its application, that it do not produce the evils it is intended to prevent. The object of a belly band is, to give a general support to the *abdomen*, and a particular one to the *navel*. The propriety of using it for the first object, will be obvious to every body at first sight; it protects the external covering of the belly from being suddenly, and partially distended, in the actions of crying, coughing, and sneezing; and, by this means, pain or more serious evil, are prevented.

217. But the necessity and utility of the second, if equally important, is certainly not as well understood. The umbilical cord, by means of which, the child is nourished during its residence within the uterus, is composed of several vessels which enter into, and depart from the belly. The passage of these vessels, requires a hole entirely through the covering of the bowels; which, for the most part, closes very quickly and soundly, after the separation of the navel. But, several circumstances on the part of the child, may interrupt this natural process—And when these happen, they give great liability to a portion of the bowels, or of the omentum, to be forced through this imperfectly closed opening, from any strong and sudden conquisitory motion, as crying, coughing, sneezing, or straining.

218. The circumstances on the part of the child, which may give rise to, or increase this liability to a “rupture” at this part, are, 1st, an unusual size of this opening, as an original conformation; 2dly, the want in the part of a healthy disposition to close; 3dly, an interruption being given to the natural process of closing, by the crying, &c., of the child, forcing the intestine, or omentum, frequently against it.

219. It will follow, that this part being weak from its very organization, it will require a steady, and continued protection, that the accident of “rupture,” may not take place.

220. For this purpose the belly band has been used from time immemorial—but its mode of action is not well understood by those who apply it to new-born children. It is wrongly imagined, that the tighter this bandage is drawn over the part, the greater is the security against the evil it is intended to prevent—than which, no greater error can exist, as will be evident to any

one who will consider the following account of the structure of these parts:—

221. 1st, The cavity of the abdomen may be considered as completely filled, or occupied by its contents; 2dly, that the abdominal cavity is formed without any absolute outlets, or communications with the external air; but has openings leading to other cavities, as those of the scrotum in males, but into which, it is not intended, as a natural arrangement, that any portion of the abdominal viscera shall enter; and also the one already described as existing at the umbilical ring.

222. Now, when the capacity of this cavity is diminished, or severely restricted, as it necessarily must be by the diaphragm being forced powerfully downward, and severely pressed on all sides by the abdominal and lumbar muscles, as must necessarily happen, in the actions of crying, sneezing, coughing, or straining, that the contents of this cavity must be constrained, and powerfully pressed, against every part, and portion of its internal face; and if there be any one portion of the surface weaker than another, that part must necessarily yield, if the force be greater than that part can sustain. It will, therefore, follow, as a matter of course, that the scrotal, and the umbilical openings just mentioned, being naturally weaker points in this cavity, they will, and must yield, when the impulses just named shall be greater than the powers of resistance.

223. From what has been said, it will readily be admitted, that any arrangement of dress which shall diminish the cavity of the abdomen, must have a tendency to do mischief, in the way we have just pointed out; therefore, the belly band may become an agent of this kind, if not properly applied—hence, it becomes an important part of a mother's duty, to attend at each dressing of the child, that the band be not too tightly drawn.

224. Evils of a lesser kind, oftentimes follow the improper application of this article of dress; namely, pain arising from compression; and colics, from the want of room for the bowels to expand. The inconveniences enumerated above, as arising from too strict an application of the belly band, suggests, the importance of this article being as elastic, as will be compatible with security—we, therefore, would direct that it should be made of a piece of flannel cut "bias," as the women term it, in order that it may possess this property.

225. The disease, against which we have been suggesting a prevention, so far as dressing may be concerned, is of more frequent recurrence than could well be imagined by one who had not made it a subject of inquiry; and when it takes place, is of much more serious consequence, than might at first sight be supposed: therefore, to prevent it, is of the first consequence.

SECT. IV.—*Of the general Dress of the Child.*

226. The other articles of a child's dress, may be regulated in such a manner as will give sufficient security against too low a temperature in winter, or as shall not oppress in summer; therefore, the petticoats for winter, fall and spring, should be made of flannel, and of such length, as shall cover their limbs with certainty. Flannel may, however, be occasionally useful in summer; especially, on sudden changes of the weather, and should always be resorted to, upon such emergencies; for there can be no greater error committed in dressing a child, than to regulate its clothing exclusively by the almanac, or sometimes, even by the thermometer—the feelings alone should determine the quantity, and quality of them, during either midsummer, or winter. If these be made the rule, we shall find it very often important to vary the articles of clothing in our unsteady climate, two or three times within four-and-twenty hours.

227. The length of the child's clothes is by no means a matter of indifference. After it has arrived at its eighth or ninth month, they should be shortened, so as to leave the feet and ankles free. By this plan, the child will use its limbs earlier and to more advantage, since they will not be fettered by the restraint of long dresses. The muscles will acquire more firmness and tone, and be more obedient to the command of the will—they will also be exercised regularly, and the flexors and extensors will have their just proportions of power; so that when the child begins to walk, it will be able to balance itself much sooner, and more successfully.

228. Some, perhaps, will object to this arrangement, especially in winter, from an apprehension that the feet and legs may suffer from cold—but this objection is easily removed, by covering these parts with their appropriate garments.

229. We are aware that this last objection, is not in confor-

mity with some writers upon this subject—we know that stockings are forbidden by them, for two reasons; 1st, because they will injure the child, by becoming wet; and, 2dly, because they will make it too tender.

230. To the first we would declare, that upon this principle the child should have no clothing whatever, since all is exposed to the same accident!—the diapers, the petticoats, &c., should be abolished, since they must often become wet in the course of the day; yet we hear nothing of injuries arising from this source. When these articles are wetted, care is taken that they are dried before they are again used, or their places supplied with fresh articles; and why should not the same attention be extended to the stockings? As regards the second objection, the reasons we have urged against all unnecessary exposure of the person of the child, will apply here; and, therefore, we shall not repeat them.

231. Shoes are condemned, because they are said, 1st, to cramp the feet, and embarrass their motion; 2dly, that the child does not learn to walk so early, as when they are exposed. These are very far from being solid objections to the use of shoes, since the first may be removed by their being made large, and of the most pliant materials; and as they afford protection from cold, and security against accident, when the child is placed upon the floor, we are decided advocates for their employment, especially, upon carpeted floors, where pins, needles, or other sharp substances are very often effectually concealed, by their being buried in the substance of the carpet.

232. The second objection has, perhaps, less force than the first; since we have ever held the opinion, that no advantage is gained, by a precocious power to walk. Indeed, we hold this to be very often injurious; especially, to such children as may be disposed to rickets. We shall have occasion again to mention this subject.

233. We have said, that the shoes may be so constructed as to do no injury to the child; this is strictly true, and should always be conformed to, but the plan proposed, (we believe originally, by Faust, in his Catechism of Health,) merits the attention of every parent; namely, having shoes made upon two different lasts, one for each foot, as is now pretty generally done in this city. We object very much to the advice of Struve upon this

subject—he recommends children to lay aside shoes for a short period at a time, that the feet may be better expanded. This is certainly bad advice; as most children would be subject to serious colds by this plan, if not to dangerous disease.

234. In winter and in cool weather, we follow the proper plan almost instinctively, as regards clothing; for we accommodate the quantity by our feelings, without regarding the state of the mercury in the thermometer. Precisely the same should be done in summer—the relative heat, or cold, should be our guide.

235. The principal articles of clothing are to be made of fine flannel; they are generally called the under clothes; fashion, caprice, or fortune, may regulate the rest, provided the garments for the feet and legs be excepted. We hold it to be of great importance that both of these be kept warm in winter; and the feet, even during summer. We, therefore, direct measures, to protect these parts of even very young children. We shall have occasion, by and by, to revert to this subject.

236. There is, however, a constant necessity to guard the child against the accidental, and partial application of cold, from wet, which is always occurring, from the very nature of things—the child should, therefore, be dried as quickly as possible after it may have become wet, by a speedy renewal of the diaper. A monstrous error prevails upon this subject; an error every way calculated to produce great disquiet, and inconvenience, if not positive disease. It is imagined, that inuring them to wet, contributes to the future health of the infant; or, in other words, that it must remain wet and cold, that it may become hardened in constitution by this filthy process. The absurdity of this practice is at once exposed, by asking, is there a mother who would apply cold wet cloths to her child; with a view of hardening it, though she might be willing to let it wallow for a long time in its filth?

237. It may, however, be said, these are not parallel cases; for the urine of the child can do no harm, as it is salt water. We admit it to be saline—what then? Will any woman apply cold salt water to her child, for the purpose, and in the manner we have just mentioned? But it may be said, the water is warm when it first touches the child, and becomes cold afterwards!—So much the worse—but will any rational mother apply warm

salt water to her child, and suffer it to grow cold, in the expectation of benefiting it? We are certain, every one of proper feeling, will say, No!

238. The employment of too many pins in the dressings of the child, is also occasionally attended by much risk, especially, when small ones are used—the latter kind should be banished altogether from the nursery, as they cannot ever be necessary, and may, as has frequently happened, be seriously injurious, by slipping into the folds of the skin, or joints of the child; or they may create a great deal of immediate pain, by their partial penetration into the skin. The clothes of the child, can readily be so arranged, as to do away with the necessity of these articles; or, at least, the quantity may be very much diminished. When many are employed, they are constantly liable to be displaced, and may, consequently, wound the child.

239. In general, nurses are in the habit of using from eight, to twelve pins, for the dressing of the child; a quantity, every way too great for even usefulness, did no risk attach to their employment; especially, as the same ends can be completely answered by two, as was the regular practice in our own family. It is true, that to render so few efficient, strings, or tapes, must be used in their stead. The following is the mode employed—the belly band, and the petticoats have strings; and not a single pin is employed in their adjustment. The little shirt, which is always made much larger than the infant's body, is folded on the back and bosom, and these folds kept in their places, by properly adjusting the body of the petticoat—so far, not a pin is used. The diaper requires one; and this should be of a large size, and made to serve the double purposes of holding the folds of this article, as well as keeping the belly band in its proper place; the latter, having a small tag of double linen depending from its lower margin, by which it is secured to the diaper, by the same pin. Should an extraordinary display of best "bib and tucker" be required upon any especial occasion, a third pin may be admitted, to ensure the well sitting of the "frock" waist in front—this last pin, however, is applied externally; so that the risk of its getting to the child's body is very small, even though it become displaced.

240. Especial care should be taken, that needles be not used instead of pins; this substitution we have witnessed; and the

risk in this case is much greater, as these articles have no heads. The most serious consequences have sometimes followed their use; I will relate a case every way in point. In the year 1798, we were requested to examine the child of Mr. J. H. B.—who, we were informed, had been for many months in ill health; it occasionally suffered the most excruciating agony, without any evident cause, and which could not be relieved but by large and repeated doses of laudanum. The child was said to cry out violently upon certain motions of its body, and, especially, upon moving its right leg; upon the upper part of which there was a hard substance, which, upon being pressed, gave pain.

241. The child was about two years of age; and had been always a very healthy one until the last preceding seven or eight months. At about this time, it was discovered to be fretful, feverish, and indisposed to exercise. It would, occasionally, scream violently; and would sometimes cease to cry, as suddenly, without any evident cause. At other times, the pain would continue, until it was controlled by the use of laudanum. It lost its appetite, emaciated rapidly, and had more or less fever constantly.

242. This was the history we received, upon our first visit, from the mother of the child. We found the child very much reduced, with considerable fever, and a profuse diarrhœa. We examined the part that was said to be painful, and found it to present a remarkable feel to the touch, as well as a singular appearance to the eye. It was placed immediately upon the tuber of the right ischium, or that part of this bone on which we sit. It was considerably swollen; so much so, as to offer a strong contrast to the opposite one, which was very much emaciated. When this was pressed, the child would complain; it was firm, and resisting; and if the fingers were made to grasp it, it seemed to contain another very firm and long tumour within it; giving the sensation to the fingers, of a pretty long piece of bone, placed perpendicularly to the surface of the tuber of the ischium.

243. We told the mother, there was unquestionably an extraneous substance beneath the skin; the nature of which we could not pretend to determine; but our impression was, it was a needle; and that nature had set about a process for its liberation, in which, she would certainly succeed in due time, should the child

have sufficient strength to support the irritation necessary for this event: but this was a circumstance we very much doubted, as the child was not only very feeble, but very ill at that moment, from fever, lax, &c. We, therefore, proposed an operation, as a speedier and safer plan—it was instantly consented to. We made an incision with a scalpel, immediately upon the point of the inner tumour, from which issued about a tea-spoonful of a transparent, and pretty tenacious fluid, resembling the white of an egg; but not quite so thick. Upon placing a finger upon the incision, and gently pressing it against the tumour, we felt a hard pointed substance directly in its centre; this was seized with a pair of forceps, and we drew from it a needle full two inches long. The wound was dressed with a little slip of sticking plaster, and healed in three days; the child from that moment had not an unpleasant symptom. The hectic diarrhoea ceased; as did the fever; and in a few weeks the child was restored to perfect health, without the aid of any medicine.

244. How, or when this needle got possession of the child's system, could never be determined—it is presumable, it was introduced by its being employed as a pin.

SECT. V.—*Of Changing the Child.*

245. There is a diversity of opinion respecting the necessity, or propriety of frequently changing the dress of a child, after it becomes wet. Upon this subject, there should be but one opinion; and this should become a maxim, from which there should be no departure; namely, that the child should never be long wet, or dirty at a time. The healthiest children we have ever seen, were those on whom the greatest care was bestowed; especially when they were very young; and it is to that period we now have more particular reference. If frequent changing be not had recourse to when the child is wet, there can be no security for the continuance of health; every time it is permitted to remain wet, it incurs the risk of taking cold, besides provoking inflammation, or producing excoriations; whereas, drying the child, as often as it becomes wet, will prevent these evils.

246. But it should be well understood, when we speak of keeping the child clean, that we do not consider the repeated re-application of the same diaper, because it has been hung in the

air, or before a fire and dried, as coming within our direction. There can be but two reasons for this filthy practice—laziness, and poverty. The first, should never be considered as a valid excuse for employing the same diaper several times, nor will it, perhaps, ever be urged as one, in direct terms; but it is unquestionably, the only one that influences upon this subject, where the second does not obtain, to render this, even in appearance, excusable. If the second reason exist, and the child have not a sufficient change, it were much better that it be without a diaper from time to time, than have those returned to it stiffened with salts, and reeking with offensive odour. We have already adverted to the impropriety of keeping the child wet.

CHAPTER XIV.

OF FEEDING THE CHILD IN THE MONTH, &c.

247. Our fifteenth instruction, (106) is one of much importance to the future health and happiness of the individuals for whom it is intended; for no one of the errors we have attempted to correct, is so frequently and so mischievously infringed. We have assumed as principles, and, as we think, upon broad and well established data—1st, that the mother is the proper and only source from whence a child, until a certain period, should derive its nourishment; 2dly, that every woman, *cæteris paribus*, is able to furnish it; 3dly, that no other nourishment, is so entirely proper, as the milk of a healthy mother.

248. If these premises be correct, the subject of feeding children within the month, is reduced nearly to a prohibition, wherever there is no exception to the above rules. Yet there may be, indeed there often is, a propriety in giving a young child something to sustain it, when there is not a sufficiently early provision made by the breasts of the mother for this purpose; but it should consist of an article as near in composition as possible, to the mother's milk. This object is readily attained by a mixture of cow's milk, water, and loaf-sugar, in the following propor-

tions:—milk two-thirds, water one-third, and a small quantity of loaf-sugar. This may be given from time to time, until the mother is able to furnish a sufficiency; or, when she has not enough, it may be made to supply the deficiency.

249. This diet alone should be made use of; for every thing else, is not only less proper, but oftentimes absolutely injurious. No addition should be made, under the expectation of making it more fit, or more nourishing; for every such addition renders it less useful, if not hurtful—we therefore prescribe every mixture, or combination, except the one just mentioned. We are aware we do not agree with the judicious Dr. Struve* upon this point—he directs, in cases of deficiency of milk on the part of the mother or nurse, that this want should be supplied by a “pap prepared of bread perfectly baked, or, what is still better, biscuits boiled in water, or fresh milk, to the consistence of thin gruel.” We unhesitatingly declare, we have ever found this to be a bad practice; and the Dr. himself would seem to bear testimony against it, in another place;† for he says, “many mothers, and nurses in general, imagine that a child cannot be supported by the breast alone, and therefore ought to be allowed a more substantial nutriment. Impressed with this erroneous notion, they provide the usual pap almost as soon as the child is born; a species of food directly opposite to that, which is appointed by nature, and derived from a healthy mother; hence it cannot fail to prove injurious.”

250. “From this pernicious practice,” continues the Dr. “arise inflations of the lower belly, gripes, and costiveness. Such children become afflicted with insupportable pains in the bowels, the iliac passion, and subsequently with rickets; they obviously lose strength, and muscular energy, notwithstanding all the care of plentiful feeding; their skin loosely covers their bones,” &c. This is truly a hideous picture; but it is nevertheless true; yet, with this before him, he did not fail two pages after, to recommend this very substance.

251. Every farinaceous substance in a state of fluid mixture, is liable to become acid; or to ferment when heated, even by a lower temperature than that of the human body, if sufficiently long continued; consequently, the child must experience all the

* Physical Education, &c. p. 224.

§ Ibid. p. 222.

evils which may follow such changes, when they take place in the stomach; therefore, all such substances must be highly improper. It may, however, be asked, will not the mixture just proposed, be liable to the same objection? We say, No—at least, not to the same extent, as the other; for if the milk be sweetened no more than to correspond in degree with the mother's milk; if it be sweetened with loaf-sugar, and given as soon as mixed, there will be very little disposition in it to change, before the stomach will exert its influence upon it, and convert it into a new substance.*

252. To make, however, the mixture of milk, water, and sugar, always acceptable to the child's stomach, several highly important rules should be observed, and never departed from, when it is practicable to observe them.

253. 1st, The milk should be pure; that is, not skimmed, nor previously reduced by water; and should be used as quickly as possible, especially, in warm weather, after it has been drawn from the cow.

254. 2dly, When practicable, it should always be taken from the same cow. The reasons for this injunction are, that cows feeding upon the same materials, give different quantities of milk; and the stomach becomes reconciled very often more readily to any one certain quality, than to a mixture.

255. 3dly, The milk should be given as soon as possible after its mixture with the water and sugar, lest it should be disposed to ferment, before it is exhibited.

256. 4thly, It should never be mixed, but when wanted; and no more should be provided than the child will take in a short

* Dr. Cadogan says, "There are many faults in the quality of the food of children—it is not simple enough. Their paps, panados, gruels, &c., are generally enriched with sugar, spice, and sometimes a drop of wine; neither of which, they ought ever to taste. We perfectly agree that neither spices, nor wine, should enter into the composition of a child's food: but cannot consent, that sugar should be omitted, since nature herself has largely furnished it in the mother's milk. And we have ever found this article not only a useful, but a desirable addition to the food of a child. We sincerely believe that it does not happen once in a million of times, that sugar is not acceptable to children of all ages. It is proper it should be so, since it is highly nutritious. If sugar be improper, why does it so largely enter into the composition of the early food of all animals? It is in vain physicians declaim against this article, since it forms between seven and eight per cent. of the mother's milk.

time; for it is much better to prepare fresh, than to run the risk of its becoming sour before it is used.

357. 5th, The milk should never be heated by the fire; this should always be done, by adding the water hot, that is intended for its reduction; or by a sand bath; this will give it a sufficient temperature, without incurring the liability to be overheated by being placed on the fire.

258. 6th, In weather that is unfavourable for keeping milk, it should be placed in the coolest place that can be commanded; or kept in often-changed cold water.

259. 7th, Should the slightest tendency to acidity be observed in the milk, it should be rejected without hesitation; nor should an attempt be made at its supposed restoration, by using an additional quantity of sugar, as this will eventually but increase the evil.

260. We cannot declaim too loudly against the filthy, and oftentimes injurious practice of nurses, making every particle of the child's victuals pass through their own mouths. The only reason they can offer for this disgusting habit, is to prevent its being given too warm—this, we grant, is a necessary and useful precaution, but it can be easily arrived at, without the aid of their lips, by adding hot water to the milk as just directed, instead of placing it over the fire. On the same footing we would place the blowing of it with their breath, to reduce its temperature.

261. Care should also be taken, that too much food be not forced upon the child at once; it is much better it be fed often, than it should receive too much at a time; for the child, when it is fed, cannot exercise the discretion it is wont to do when it sucks; for when it has received enough by its own exertions, it will stop spontaneously.

CHAPTER XV.

OF OBSERVANCES TOWARDS THE MOTHER DURING
THE MONTH, &c.

262. If the directions already given for the general conduct of the woman during labour, and immediately after her delivery, be strictly observed, it will rarely happen, that she will not have what is called "a good getting up." This good getting up consists in the gradual restoration of health, by a return of strength, through the proper exercise of the functions of the stomach, and the judicious employment of the various muscles of the body.

263. To ensure the healthy play of the stomach, and of the muscular system in general, the patient should be managed in such a manner, as will, in great probability, *prevent* the occurrence of disease, rather than be treated as if the evil were absolutely present. For this purpose, frequent changes of linen, and of every other soiled article, is absolutely necessary, that there may be no offensive gases generated, to contaminate the air of the room, and render it unfit for the purposes of respiration.

264. Fresh air should, therefore, be freely admitted into the room; but the woman should be placed so as not to receive a partial current of it. Unfortunately for the interest of the patient, the nurse thinks for her on this subject, and, to effectually guard against the possibility of such an accident, she encloses her in a space of six feet square, by curtains, and condemns her to the horrors and mischiefs of breathing twenty times, the air that has already been as often discharged from her lungs, and each time loaded with an increased quantity of irrespirable gases.

265. One of the greatest improvements the lying-in room could receive, would be, to banish curtains from the list of the "indispensables" for furnishing it, or, at least, so to manage them, as to make them subservient to ornament alone. The pretexts for the employment of curtains are, first, "the bed looks so naked without them;"—this requires but a few fashionable examples, to make it appear "when unadorned, adorned the most;" and it were a "consummation devoutly to be wished,"

that some few of influence would lend their aid for this purpose, for the benefit of their fellow-creatures. Secondly, "the danger of catching cold;"—this is sheer cant; let every patient commence without these articles, as many from necessity are obliged to do, and they, like them, will have nothing to complain of, that should be directly, or, with propriety, charged to the want of curtains. If a room be so situated, as unavoidably to expose the woman to a draught of air, a temporary screen will fulfil every duty the curtains possibly can, without involving her in any risk." Thirdly, "to protect the woman against too much light." This reason is even more futile than the one last noticed; for the inlets by which light is admitted can readily be shut, without expense, or any very great exercise of genius. Fourthly, and lastly, "Curtains in cold weather are necessary to keep the patient warm." An additional blanket will do this vastly better.

266. Fresh air, we must repeat, is of the greatest possible service to the lying-in woman; it is, in a word, indispensable to the regular return of health; and, if properly indulged in, will prepare the patient, without hazard, for the enjoyment of it abroad, in suitable weather. It has been put to us as a question, "How soon can a woman, after confinement, venture abroad with safety?" This question, like many others, would seem to require no condition, and might be directly replied to; but it, like many others of the same apparent simplicity, involves a number of considerations, which are essential to be known, before it can be properly and satisfactorily answered.

267. 1st, Because the period which may have elapsed after delivery, cannot, of itself, be a guide; for some women are better at the end of five days, than others may be at as many weeks; therefore, the actual condition of the woman must alone be considered, and this without reference to the days that may have elapsed from the birth of her child.

268. 2dly, because the season of the year, and state of the weather, will very much influence a decision of this kind; for the weather may be such for weeks together, as to render it improper for a delicate woman to leave the house: as, in winter, fall, or spring, or, even in summer, it might, for a short time, be equally so, from heat or rain.

269. Therefore, a conditional answer must always be given to this question; and, we would say as a general rule, if, at the middle,

or end of the third week after confinement, the weather be fine, and sufficiently warm, to render much additional clothing unnecessary, and, if the patient be without disease, though, perhaps, feeble, she may venture abroad in a close carriage, with much advantage to herself and child. Robust women, when free from any febrile affection, or local inflammation, may venture even earlier. And, it may be well to recollect, that the sooner the patient can safely take the fresh air, the better; since, both she, and the child, will profit by its influence; for, there is a vigour, and a healthy play given to every function of the body, by air, and exercise, that cannot be procured by any other means. The best nurses are, therefore, those of active habits; and those who can give employment to all the muscles of the body in the open air. For, it will be obvious to every one, that, if the functions of the body be not healthily performed, especially those of the circulation, and the various secretions, the products of their actions cannot be entirely healthy; therefore, the milk by which the child is to be sustained, may not be sufficiently nutritive, or fail in other highly important qualities.

270. To a nurse, as well as to her child, there can be nothing more prejudicial than an indulgence in too sedentary habits; the exercise, therefore, we have recommended, should be enjoyed whenever fit occasions may present themselves, that the milk may be more certainly and abundantly secreted; and, at the same time, its invigorating properties be increased; but, in indulging in exercise, it is always to be understood, that any excess of it will be prejudicial. We would, therefore, wish to be considered to mean, only that degree of it, which shall not too much hurry and disturb the circulation, or occasion over-heating—consequently, running, too fast walking, or dancing, should be carefully avoided; especially, as much injury is done the child, by its receiving the milk, after such violence has been offered the circulatory system.

271. But, should accident, necessity, or inattention, place the system in the situation just mentioned, the child must be withheld from the breast for, at least, two hours after the occurrence; and then, the milk which was present in the breast at that time, must not be offered it—it must be drawn off by some other means, and thrown away. The same may be said, after an indulgence in any violent passion, or emotion of the mind, as the most

frightful and deadly consequences have followed a neglect of this precaution.

272. It is said by many to be a good practice, "to gradually accustom the woman to the air in the house, before she ventures abroad;" and too many adopt the plan, to the serious injury of the patient. This is done, in cold weather, by making her travel *up stairs** and down, in a strong current of air. The consequences of such exposure may be easily imagined.

CHAPTER XVI.

OF THE DUTIES OF THE MOTHER AFTER THE MONTH, &c.

273. There is no solicitude more natural, nor more painful, than that which a young and inexperienced mother feels, when, for the first time, she is left to her own guidance in the management of herself and child, by the departure of her nurse. For, up to this moment, she looked to her for every direction, and for the fulfilment of every necessary and important office, as well for herself, as for her child. But, left to her own discretion, she feels with more than necessary force, perhaps, the responsibility of a mother; of a mother, on whose care and judgment the future health and welfare of her child depend. She is willing to suffer privations, or even to make sacrifices for its benefit, but is ignorant when the one might be necessary, or where the other might be availing. Uncertain, from want of experience, of the propriety of any thing she may do for either its

* There is a custom among nurses and gossips, no less absurd than ancient, which obliges the woman to go "*up stairs*," before she ventures down; and this is insisted on, be the season, or weather, what it may. By this plan, the woman may be exposed to a cold and chilling atmosphere, immediately after leaving a warm room, and, sometimes, perhaps, even when she is in a state of perspiration. We have known a number of instances of severe "*pull backs*," as they are called, produced by a compliance with this superstitious, and dangerous practice. The good sense of every woman, who may become the object of this improper custom, should be exerted to destroy it, by not complying with it—and this, at the risk of *even offending "a nurse."*

comfort, or its use, she trembles lest she commit an error; nor is she confirmed in her own opinion, until she has the cold and negative proof, that what she has done, has not done harm. Or she may, from too great an indulgence of her fears, neglect the most common, and obvious of her duties.

274. The delightful task to the experienced mother, of washing and dressing her infant, is to her a source of inexpressible anxiety. She applies water to its body, with a sparing, and trembling hand; the child, perhaps, cries upon its application; the over-sensitive mother becomes alarmed, lest she has given it unnecessary pain, or has done something improper; she becomes agitated, and but partially washes, and but imperfectly dries it; or she abandons the operation to one of less feeling, but, perhaps, of no more experience than herself, and this, perhaps, to the injury of the child.

275. We once witnessed a most interesting scene between a young mother, and her husband, upon an occasion similar to the one of which we are now speaking. We were chatting with a young lady in a lively manner, when her husband suddenly entered the room—she sprang upon her feet, and violently clasped him round the neck, and with a convulsive cry of exquisite pleasure, she sobbed out, “I dressed our Julia to-day, entirely with my own hands!” And never did we see a finer subject for a skilful painter, than the one presented by this interesting couple at this moment. We soon learned that the performance of this duty, had up to that moment, been one of great misery to the too timid mother.

276. We would earnestly recommend to every mother with her first child, to try her skill daily at washing, and dressing her infant, a week or ten days, before her nurse leaves her, that she may become familiar with the routine, and gain a little experience in the method.

277. The next anxiety which a young mother feels, is upon the subject, of what is most proper for her to eat and drink, “*as a nurse.*” For this information, she appeals to those whose greater experience she supposes would well qualify them to answer. By one, certain articles of diet are recommended as indispensable; by another, they are condemned as improper, if not as positively injurious. Other substances are extolled in their turn; but, unfortunately, these are forbidden by other advisers,

and that with an earnestness, that bids defiance to either argument, or resistance. Perplexed by such discrepancies, she knows not what plan to pursue; and when she has become almost a prey to anxiety, some sensible friend lays down a rule, which, as a general one, is the only one that should have been given at first; namely, to eat and drink such articles of diet as her former experience had proved, did not disagree with her own stomach, and to pursue this plan, unless a farther experience should declare them to be improper, or injurious, to herself, or her child.

278. No advice, perhaps, can be more safe and judicious than this; for we have almost uniformly observed, that whatever food is found to agree with the mother, is almost sure to do so with the child; therefore, such substances as are said to disturb the latter, will almost always be such as have disagreed with the mother *previously*. Nor is this of difficult explanation. Any substance with which the stomach is not familiar, or to which it is not entirely reconciled, will be either rejected altogether, or will be but incompletely digested—if it be but imperfectly assimilated, it will enter the system as ill-elaborated chyle; and this, necessarily, will make a corresponding change in the quality of the milk. In this state it is received by the child; its stomach not being able to subdue it to a proper nourishment, flatulency is produced, or, perhaps, even vomiting, ensues.

279. Certain liquors, as ale, porter, beer, &c., certain substances, as cabbage, sweet potato, pickles, vinegar, &c., are all in their turn said to disagree with the child—that is, as we would insist, they disagree with the mother; they should, therefore, be abandoned, without hesitation, for her own sake; for there the mischief begins; but there it will not stop, unless she have sufficient resolution to give them up; for her child will soon feel the effects of such irresolution; and how extensive these may become, it is impossible to say.

280. Serious mischief is oftentimes done by the mother attempting to remedy every temporary diminution of milk, by increasing the quantity of her food, or by imagining that some stimulating drink will answer this valuable end. Hence, indigestion, fever, and sometimes a habit is generated of too freely indulging in ardent spirit. This practice has for its excuse, that the milk fails, because the woman is weak, owing to her not

taking a sufficiency of nourishment; hence, too much feeding is indulged in, to remedy this supposed weakness—a task is now imposed upon the stomach that it cannot perform, however healthy it may be, and indigestion must, of course, sooner, or later, be the consequence. Or, owing to some trifling disturbance in the system of a temporary kind, the secretion of milk may be for the moment suspended, or diminished: an attempt is made to recall it by an increase of food, by which a slight inconvenience is converted into a permanent derangement of the system; or a fever of even a dangerous character, may be generated. Or, owing to a false theory, or imperfect observation, it has been supposed, that certain liquors have a control over the secretion of milk; and hence, the too free use of certain combinations, in which ardent, or fermented spirits, too largely enter: thus, porter, ale, milk punch, &c., become the ordinary beverage of nurses, to the almost certain destruction of their morals.

281. We must not, however, be supposed to deny the influence of certain solid, as well as fluid substances, upon the secretion of milk; this would be turning our eyes from reason, as well as experience; for we well know, that unless the body be properly supported, there must soon be a diminution of milk. We only mean to insist, that it is the nutritious, and not the stimulating part of diet, that is subservient to the plentiful, and healthful formation of this fluid. In proof of this, we need only observe, that we have often been consulted upon the subject of the failure of milk, where an anxious mother herself, or a hireling nurse was concerned, and been informed by them, that they had tried every thing with a hope of improving it; such as rich victuals, porter, ale, beer, milk punch, &c., without success, or it was followed, perhaps, by a diminution of it.

282. In such cases, we have often succeeded in producing a plentiful supply of milk, by adopting the opposite plan of treatment; for it must be borne in mind, as an important truth, that this failure proceeds more frequently from an over, than from an under quantity, of food, or of drink. It is a fact, well known to all who have paid attention to the consequences of arterial excitement, that when it amounts to even moderate fever, the milk almost immediately diminishes in quantity; and, also, when this action is diminished, (provided it had not continued too long,

by suitable remedies, that the secretion of milk again becomes more abundant.

283. Upon this principle, we have frequently prescribed evacuants, and abstinence, to promote the secretion of milk. With a view to illustrate this situation of the breasts, under an increased excitement of the system; and the advantage, nay, the absolute necessity of reducing the force of the blood-vessels, for the purpose of restoring their secretory functions, we will relate one, of several cases, in which this plan was pursued.

284. Mrs. — informed us, with great concern, that she would be under the necessity of procuring another wet nurse for her child, as the milk of the one she had, diminished so rapidly, as to make her certain her child could not be half nourished. It had begun to fail about three weeks before, without any evident cause; and, although she had constantly tried the most generous diet, and cordial drinks, she could hear of, still it diminished daily, and was now so reduced, as to scarcely offer enough for the child, once in twenty-four hours; or, rather, the whole quantity furnished in that period, would not amount to more than one good meal.

285. We requested to see the nurse; she was, accordingly, presented. She was a young, healthy-looking woman, of florid complexion, and clear skin, and without a single mark, that would lead to the suspicion of a deficiency of milk from any imperfection of constitution—her milk was six months old, as it is called; she had been engaged in this family about three, of that time. She was from the country, and for some time gave entire satisfaction, as to her conduct, temper, health, and quantity of milk. Upon being questioned, we found she was living upon a much more generous and stimulating diet, than she had been previously accustomed to—she not only ate more at each meal than she had formerly done, but ate a greater number of meals; and, instead of drinking milk, water, or milk and water, as she was wont to do before at such times, she was indulged in porter, ale, beer, milk punch, &c., with a view of keeping up her milk.

286. We found she had occasional headach; rested ill at night; had a disagreeable taste in her mouth in the morning; her tongue was furred, and her pulse full and frequent. It was evident her system was too much excited by her mode of life, and that nothing would restore her milk but a reduction of it. We,

accordingly, ordered her to be bled; to take a brisk dose of salts; confine herself to a strict vegetable and milk diet, and to drink nothing but water.

287. At first, we experienced much opposition to this plan; but it was eventually submitted to, and with such complete and rapid success, that in a week there was a sufficient secretion of milk. It may be proper to observe, that this woman after this period, confined herself to a plain, simple diet, and never after had occasion to complain of a deficiency of milk.

288. This case, among many others, shows us, that the scheme the wealthy, and plentiful families adopt with their wet nurses, is wrong from beginning to end. As little change should be made in the diet of the nurse, as is strictly consistent with sufficient nourishment; and none, perhaps, in her habits of employment; that is, she should not exchange active for passive habits. If she have been accustomed to work, give her, by all means, uniform employment. If she have been much exposed to the air and weather, let her and the child have the advantage of air and exercise, upon all proper occasions. The extremes of heat and cold should, of course, be avoided, as well as a wet atmosphere.

289. This case, also, well illustrates the position we have endeavoured to sustain, namely, that a stimulating diet is not the best method to procure an increase of milk. But, at the same time, we are far from declaring, that a more generous diet may not be occasionally necessary—but such cases are by no means so common, as is generally imagined, and still more rarely, is a stimulating one proper.

290. The remedies which we have ever found to contribute most to the improvement of the milk, are, regular exercise in the open air, milk and water, milk alone, malt tea,* molasses posset,† or porter, or ale posset,‡ when a mild stimulus may be

* *Malt tea* is made by pouring a quart of boiling water upon a gill and a half of ground malt, which is permitted to stand, after two or three good stirrings with a spoon, until cold: it must then be strained off. The tea may be sweetened, or not; or, it may have the addition of milk.

† *Molasses posset* is made by throwing a wine-glassfull of molasses into a quart of milk, after the latter has been heated nearly to the boiling point; it is then permitted to cool—the whey to be poured off, and drunk.

‡ *Porter*, or *Ale posset* is made precisely as directed for the molasses posset, except that half a pint of either of these liquors is substituted for the molasses, and it is permitted to stand until a separation takes place.

Dr. Struve says, (Phys. Ed. p. 225,) “there are certain means by which the

required. These may be drunk freely, at any period of the day or night; and the nurse who may employ them, will find herself much satisfied with their effects.

291. Having, in the foregoing pages, considered what may be proper for the woman during the periods of gestation, labour, and during the period of confinement; also, what may be deemed important to the child after its birth to the end of the month, it may be farther useful to bring the whole of our instructions upon these points into a condensed form; we shall, therefore, sum up the various directions we have given, divested of the arguments by which they were sustained, in the form of a "Recapitulation." By this means, the reader can in a moment become possessed of the instructions, without going through, a second time, the reasonings. This plan will contribute to aid the memory much, since the directions are numerous and, perhaps, in some instances novel; and may require repetition, to fix them sufficiently well upon the recollections of those, who may wish to abide by them, themselves, or merely to inform themselves of what can be said, upon this interesting, and highly important subject.

CHAPTER XVII.

RECAPITULATION OF THE INSTRUCTIONS, GIVEN TO THE FEMALE DURING PREGNANCY, LABOUR, AND CONFINEMENT; AS WELL AS RULES FOR THE GENRAL MANAGEMENT OF THE CHILD DURING THE MONTH.*

292. To prevent abortion, &c., she should scrupulously observe the following rules:—

293. 1. She must avoid all unnecessary, and especially, violent exertions. The quantity of milk of a suckling woman may be increased, or diluted. In the first place, I would advise her to drink a glass of cold water every morning, but to adopt no remedies, however specially recommended by common midwives." He then recommends the porter posset suggested above.

* We have not thought it necessary to make a summary of the chapter upon "Marriage."

lent exercise, or exertion; such as too fast walking, running, dancing, &c.

294. 2. To avoid, as much as may be, placing herself in a situation which may subject her to unpleasant sights, or seeming dangers.

295. 3. To shun over-heated rooms, and stimulating liquors of every kind.

296. 4. To avoid all substances that have a tendency to produce a costive state of bowels; or those which may give rise to "indigestion," as late suppers, too great a quantity of food &c. &c.

297. 5. To take no substance, or drug, that shall give too frequent, and too severe motion to the bowels; or such as shall too severely constipate them, as chalk, opium, &c.; and, especially, not to disregard the calls of nature, when they would be successfully exerted.

298. 6. To remove from her chest, waist, and abdomen every restraint; lest undue pressure should be made upon them.

299. 7. To avoid all substances that may have a tendency to increase the irritability of the system; as strong tea, coffee, opium, &c., the too long indulgence in bed, &c.

300. 8. To shun all severe study, night watching, &c.

301. 9. To avoid, with much care, unnecessary blood-letting, or submitting to this operation, merely because she is pregnant.

302. 10. To have, however, recourse to this operation, when pain, headach, a sense of fulness, giddiness, the loss of, or imperfect sight, &c., may be present to declare the necessity of it—but it were always better, when practicable, to have the advice of a physician.

303. 11. The woman who may be in the habit of miscarrying, should never venture upon blood-letting without advice, as it sometimes produces the evils it is intended to prevent.

304. 12. To avoid the indulgence of all inordinate appetites; as too much repletion of the stomach may give rise to many formidable disease.

305. 13. She must give up the false notion, that more food, &c., than ordinary, is required, because she is pregnant, as the opinion is not founded in either reason or experience.

306. 14. She must assure herself, by a reliance upon the opinions of those whose business it is to ascertain the truth upon

this point, that nature institutes the sensation of nausea, and the act of vomiting, with a view to prevent too great fulness, during this period.

307. 15. She must not indulge in the fear, that should a certain longing have been ungratified, her child incurs the risk of being marked in consequence of the disappointment, as this apprehension is not warranted by reason, nor confirmed by experience.

308. 16. She must dismiss from her mind, all apprehension of future consequences to her child, should she have been so unfortunate as to have suffered any great alarm; been surprised by any unexpected event, or appalled by some frightful object or occurrence—as there is no one good reason to believe in such influence upon the child.

309. 17. To most sedulously guard against any sudden gusts of passion; as any indulgence in them, may be highly injurious, if not fatal to herself and child.

310. 18. To solicit, as much as possible, tranquillity, and equanimity; as their influence is highly valuable to herself and child.

311. 19. To believe, in general, that food injures more by its excess, than its quality; by taxing the powers of the stomach too highly.

312. 20. To avoid, with as much care as she would impending ruin, an indulgence in cordials, liquors, &c., under the pretext, of calming sickness, relieving pain, or expelling wind; as a destructive habit is but too easily generated by their employment.

313. 21. She must not persuade herself, it is only the excessive indulgence in such articles, that is mischievous; but she must clearly understand, that every thing which may unduly stimulate the system, is highly injurious to the pregnant woman.

314. 22. Let her turn a deaf ear, to every tale of disaster, or of horror, which purports to have happened to the pregnant, or lying-in woman; for, upon investigation, such tales will almost always be found without foundation, or very greatly exaggerated.

315. 23. Let her procure the best aid, for the period of her necessities, that circumstances will permit.

316. 24. Let her not be imposed upon by a false theory, or

bad advice; nor use too much exercise towards the latter period of her time, lest she provoke premature labour.

317. 25. Let her not, when the period of labour is approaching, indulge in gloomy forebodings, or in unreasonable fears for the event; nor, by any means whatever, forget, how rarely death happens during, or even after a well-conducted labour.

318. 26. Let her not attempt to increase the frequency, or force of her pains, by taking improper articles of food, or by frequent marchings across the floor.

319. 27. Let every precaution be taken against an attack of fever; for this purpose, she must scrupulously avoid every stimulating substance, either as food, drink, or remedy. Let her bear in mind, that an overcharged stomach is always unfavourable to the healthy progress of labour, or its eventual safety.

320. 28. To prevent despondency, because the labour may be rather longer than she anticipated; let her recollect, that the safety of this process does not depend upon the celerity with which it is performed.

321. 29. That she may secure to herself the best possible chance for her safety, let her have no opinion of her own, that may clash with those of her medical attendant; let her, therefore, be passive, and obedient.

322. 30. Let her not, as she values her life, indulge in any gust of passion; lest she provoke incurable convulsions.

323. 31. Immediately after she is a mother, she must impose upon herself the most perfect tranquillity; that no untoward circumstance may be provoked.

324. 32. She must carefully avoid all the exciting causes of fever, as far as in her power, by not indulging in improper articles of diet; sitting up too early, and too long; too hot a room; curtains too much closed; or seeing too much company.

325. 33. She must aid the exertions of her physician, to prevent any after evil; by implicitly following his directions, and preventing, as much as may be in her power, the nurse running counter to them, especially, until after the fifth day complete.

326. 34. Let her not permit herself to be persuaded from having her child put to the breast; so soon as she herself may be able to bear the fatigue.

327. 35. Let her not delegate to another, the sacred duty of

nursing her own child; unless the reasons for so doing be insurmountable.

328. 36. She must most scrupulously attend to the dressing and undressing, or even performing this herself, when her health and strength will permit this delightful task.

329. 37. She should never, under any pretext of convenience, permit her child to be fed, so long as she can supply it with sufficient nourishment herself: and to secure to herself this important point, she should pay a scrupulous regard to her diet, and her exercise in the open air.

330. 38. The dressing of the child should early engage the attention of the mother; it should always be made subservient to comfort, instead of show.

331. 39. This should consist in part of flannel; especially, during cold, or even cool weather.

332. 40. The dressings of the child should be changed as often as they become soiled; when this luxury can be indulged in.

333. 41. Though it may be found, that flannel is the most eligible substance, as a general rule, there are cases in which it may be improper; and these should be carefully distinguished.

334. 42. The belly band is one of the most important parts of the child's dress; it should *always* be made of flannel, and should be always cut *bias*.

335. 43. The greatest care should be taken to apply it properly; but too tight an application should be particularly avoided.

336. 44. If this bandage be applied too tightly, it may produce the evil it is intended to prevent.

337. 45. The child should be carefully protected against all unnecessary wet; and when it is discovered to be in this situation, it should be changed as quickly as possible.

338. 46. In dressing the child, as few pins should be employed as possible; three are all that are necessary, if the clothes be properly arranged.

339. 47. As a general rule, the child should never be fed, at this period of its life; there may be exceptions, however, that may render this necessary.

340. 48. When an exception to this rule exists, the food of the child should consist of milk, water, and sugar; and exhibited under the important restrictions we have made.

341. 49. If the child be fed, it should have but small quantities at a time, and never crammed to surfeit.

342. 50. The woman should exercise in the open air, as soon as this is rendered safe, by the state of her health, the period after confinement, and the state of the weather.

343. 51. She should never subject herself to partial exposures, under the hope of "hardening herself."

344. 52. The reapplication of a diaper after it has been dried simply, should be prohibited; as several evils arise from the practice.

345. 53. The mother may indulge in such diet, as her experience has proved to be innocent—for it will seldom or never disagree with the child, when it perfectly suits the mother.

346. 54. When the mother experiences any inconvenience from the use of any substance or substances, she should not hesitate a moment to abandon them; for if they disagree with her, they will be sure to do so with the child.

347. 55. Should there be a failure in the quantity of milk, the mother must not attempt to increase it, by highly seasoned food and stimulating drinks.

348. 56. She may sometimes, however, use with great advantage, the nutritious substances recommended in the text.

349. Having, in the preceding pages, considered the duties of the mother during pregnancy, and confinement; we shall now proceed to detail what may be proper for the offspring, from the period of its birth to that of puberty. We shall confine ourselves, in this part of our subject, strictly to the physical influence of certain agents upon the human body; and the most proper physical education, up to the period just prescribed. The medical treatment will form a distinct subject of consideration, and the moral we do not propose to treat of. But, before we commence this part of our subject, it will be well to describe the requisites of a nursery.

CHAPTER XVIII.

OF THE NURSERY.

350. Every body, almost, in easy circumstances, has a part of the house appropriated to what is called the "Nursery." The one chosen for this important purpose, is, generally, or at least too often, the most exceptionable part of the building. It is usually selected because it is "handy," or because it is the only one that can be spared; without the smallest attention being paid to its fitness for the purpose for which it is designed.

351. The room for the purposes of a nursery, should have every advantage which space or location can give, when either or both can be commanded. We shall, therefore, say in what a well appointed nursery should consist, leaving it, of course, to the ability of every individual to adopt or approach it, as nearly as circumstances may permit.

352. The nursery should be spacious, with a high ceiling, and perfectly dry; it should not be exposed to the operation of any cause that may render it damp; as, on a ground floor; too much shaded by trees; or placed beyond the occasional influence of the sun. Its windows should be tight, and the walls dry; the floor should be of wood that will quickly dry after being wetted for the purposes of cleanliness; but the utmost care should be taken, not to hasten this process, by placing ignited charcoal in its centre. Serious mischief has frequently arisen, by this absurd and dangerous practice.

353. It should be so situated, that the door or doors shall not open immediately on staircases; or, should this be unavoidable, the heads of the stairs should be secured by latticed half-doors; and these so constructed, by having their slats placed perpendicularly, that the child cannot climb upon them, and thus defeat their object.

354. The windows should have cross-bars placed before them, to remove apprehension of accident to the child. They should be five inches distant from each other, that the windows may be opened for the purposes of ventilation or air. They should have shutters, that the room may be darkened, when the abstraction

of light becomes necessary. The windows should not have curtains of a glaring colour, as the light will be increased thereby, and prove injurious to the eyes of young children.

355. If possible, the nursery should consist of two rooms; and if they opened into each other, it would yield very great advantages; the children could retire to one, while the other was ventilating, or getting cleaned, by washing or sweeping; this would contribute greatly to their comfort, as well as to their health. They would, also, be removed from the dangers of damp, the inconvenience of dust, the risks from a cold stream of air, while the room is drying or sweeping, besides having an enlarged space for the exercise of their limbs. In a space so extensive as this, they could improve their strength by engaging in many little sports, which children are so ingenious in devising, when they cannot, from the condition of the weather, take exercise in the open air.

356. Besides, such an arrangement will permit the children to have a room, fresh and sweet, in the morning, after having rendered the other foul by sleeping in it. This is an advantage which has been but too little attended to, notwithstanding its obvious utility; especially to the younger children, who cannot always escape into the purer air of other parts of the house.

357. Carpets, in cold weather, are decidedly useful, if they be properly managed; that is, well shook, and aired, every week. By this means, the dust is removed from them, and they have the advantage of becoming dry by exposure. We are sensible that several objections may be raised against carpeting a nursery; as the great quantity of dust they accumulate; their becoming often wet, without the chance of drying; their retaining grease so fixedly as not to be removed; their absorbing, and then giving out a variety of impurities, &c. But, notwithstanding all these reasonable objections, we are persuaded, that one single advantage which they possess in a nursery, overbalances all that may be said against them—namely, their protecting the heads and limbs of children from injury when they fall.

358. The elastic material (wool) of which the carpet is formed, is well calculated to break the force of the blow which the head or limbs of the child receive, when it falls upon it; so much so is this the case, that we have not known a single instance of serious injury from falls upon them. We are sure to have our

anxiety diminished, when called to a child who has received a blow upon the head from a fall, when, we are informed, it fell upon a carpet. We are, therefore, of opinion, that, when the child falls from a moderate height, it will rarely, if ever, suffer a serious injury from it—this, certainly, would not be the case, did the child fall upon the naked floor.

359. We must, however, be understood to recommend carpets in cold weather only; for, as soon as the weather becomes sufficiently warm to do without fire, the carpet should be removed, and its place supplied by an even, well-stretched mat; or the floor may even be left bare; for, at this period, it is to be presumed, children will be but little confined to the nursery, unless the state of the weather prohibit their enjoying the open air: this state of weather may consist in its being wet, too windy, or too hot.

360. The furniture of a nursery should be as little in quantity as convenience will permit, that the children may have the space that would be unnecessarily occupied by many articles; especially chairs and tables. It should, therefore, consist of the beds for the children and nurse, or we would rather say mattresses, as we are of opinion that feather beds should be driven from the nursery, for the following reasons—first, they are too warm for the purposes of the best health, especially with feeble children; accumulating so much heat, as to unduly stimulate the whole cuticular system; thus giving rise to unnecessary, nay, injurious perspiration; secondly, the effluvium from feathers is extremely oppressive, particularly in warm weather, and to children of feeble lungs; thirdly, they discharge a prodigious quantity of dust, intermixed with minute portions of down, occasioning cough, and other inconveniences.

361. If it be objected, that mattresses are too cold in our climate for winter, we would immediately obviate it, by recommending the spreading of a blanket over the mattress, which will effectually remove the inconvenience complained of.

362. When practicable, children should sleep in separate beds; and these should be large; for it is injurious to have them cramped when they sleep, as well as indelicate to crowd opposite sexes together. Besides, the degree of heat generated by contact, will be certain to make them uncomfortable; they will throw off the bed-clothes, and thus expose each other to colds.

363. Children should never have more bed-clothes spread over them, than is sufficient to maintain a proper degree of warmth; if more be put upon them, they become oppressed, or perspire; both of which should be avoided.

364. Should we not, however, succeed in establishing our objections against feather beds in winter, we are persuaded every body will agree in the use of mattresses during hot weather. Should these not be at command, the sacking-bottom, or even the floor should be substituted—for almost any thing is preferable to feathers.

365. It is in the nursery, in a great measure, that the habit of early or late rising is generated—this is a matter of much importance; and the greatest regularity should be observed, that a proper one be formed. Children should, therefore, retire at a regular, and sufficiently early hour, to ensure their early getting up; for beyond a certain time, sleep is injurious. It would, however, be a little difficult to establish a positive rule upon this subject, as some children, like adults, will require more sleep than others. Children who exercise much, will need more sleep than those who exercise but little; consequently, they should not be confined to precisely the same number of hours.

366. All children are disposed to be early risers; this propensity should, therefore, be cultivated, by permitting them to retire sufficiently early to bed; and after they are in bed, they should not be allowed to keep each other awake by playing, and thus depriving themselves of sleep; for the same reason, no noisy employment should be permitted in the nursery, that the children need not be disturbed. Indeed, it would be best, when children have attained their third year, or even before, that they should not be allowed even light in their rooms, that they need not unnecessarily be kept from sleep, as well as to prevent any apprehension from being left in the dark.

367. When children first awake in the morning, however early this may be, provided it be daylight, they should be allowed to get up, and be dressed; for if this be not done, and they are forced to lay longer than is pleasant to themselves, they will become fretful and dissatisfied, or again fall to sleep—in either case, a real evil is induced: in the first, the disposition of the child is injured; and, in the second, a habit of lying too long is generated.

368. It should be carefully guarded against, that no unnecessary habits are indulged in during the period set aside for sleep; such as drinking water several times in the night, or rising too often to discharge the contents of the bladder. If the first be indulged in, an artificial thirst will be created; if the second, the bladder acquires a preternatural degree of irritability, which is almost sure to terminate in the disgusting and inconvenient habit of wetting the bed.

369. After children have risen from their beds, they should be dressed as quickly as possible; they should be carefully washed, and combed, and then be permitted to inhale the fresh air, either in doors or without, with as much freedom, as the nature of things will permit. For the first purpose, the nursery should be well, but carefully ventilated; or, what is still better, the children should be allowed to retire to another room, when practicable, and, especially, during the time the nursery is cleaning; hence, the propriety of two rooms being devoted to this purpose; and, for the second, when the weather is proper, they may be allowed to go out of doors.

370. So soon as the above necessary operations are performed, children should have their breakfasts; so that the stomach need not suffer, either from too long fasting, or from the indulgence of too great an appetite, excited by long abstinence.

371. A cradle for young children is a very important appendage to a nursery, notwithstanding the objections which have been made against it, by ingenious speculators upon the subject of the physical education of children. The advantages of the cradle are, 1st, it can be placed in any situation of the room, without disturbing the child, for the advantage of either warmth or coolness; for light or darkness, or for air; 2dly, it supplies the most gentle and certain anodyne, if we may so term it; since it will amuse by its motion when the child is placed in it awake; lull by its sameness when disposed for sleep; and perpetuate it, when desirable, by a familiarity with its action: for it must be recollected, that for nine months previous to birth, the child has been indulged in the gentlest motion, in the fluid in which it constantly swims; consequently, the motion of a cradle would seem to be but a continuation of an exercise, to which it had been long used.

372. The objections to the use of the cradle are easily obvi-

ated. It is said, it may produce fatuity, by constantly shaking the brain; this could not possibly happen, unless the cradle were violently agitated; in which case, it would be the abuse of the cradle that should be objected to; since no such consequence can possibly follow its proper use: for, did gentle agitation do mischief to the organization or functions of the brain, why are not all children born fatuitous, since that organ is subjected to it from its earliest formation? Another objection is urged, which is as easily obviated, it is said, the child runs much risk by its liability to overset—now, it must be by the employment of extreme violence, or carelessness, that this can be looked upon as an objection to the cradle; for, certain it is, that a proper use of this machine can never be attended by such a consequence.

373. In using the cradle, however, we would suggest certain precautions, that it may not be converted into an improper machine. We would forbid all violent motions of it, since it would not only defeat the objects for which it is employed, but might be attended with the risk of oversetting. The motion of the cradle should be made an efficient means to procure rest; and should, therefore, not be so constantly used as to lose its effects, by too frequently employing it; nor should its influence ever be taken advantage of, to procure more than the necessary degree of sleep, as it may tend to the disadvantage of the child; nor should we think the cradle necessary to children much beyond the second year, as, at this time, their exercise will dispose them to sleep soundly, without its agency.

374. The means by which the nursery is warmed, is not a matter of indifference. Two important objects should always be kept in view in constructing it—namely; first, security from accident to the children; and, secondly, affording sufficient warmth.

375. These may be secured, by an open fire of wood, or of coal, protected by a high and substantial fender of wire, that the children may not approach it too nearly; or by a stove placed near the hearth, and defended by an iron railing. We, however, should never advise the stove where an open fire can be made use of with equal advantage as regards heat; and we believe that the introduction of the Lehigh coal will secure to us this desirable end, with less expense and more security than any other method.

376. The objections to a stove are numerous; and deserve a serious attention—1st, there is great danger that the children may get severely burnt, as we have often witnessed; 2dly, they are almost always too much heated; 3dly, the air is rendered too dry by a destruction of its moisture, and becomes impure by the burning of millions of little particles which are constantly floating in it; and, though one of these objections may be partially obviated by placing water upon the stove, yet it will not remove the second; 4thly, the air is almost constantly injured by substances thrown upon the stove, as grease, meat, &c.; 5thly, there is always a temptation to do some kind of cooking upon or in a stove, to the destruction of the comfort, or to the injury of the health of the little inhabitants of the nursery, besides the serious risk of scalding them by heating water upon it. We lately saw an instance of death from this cause, and have witnessed many times minor accidents from the same source.

377. We have already forbidden the performance of a number of operations in the nursery—we need not repeat them here—we shall merely reiterate, that the nursery should be the purest place in the house, as well as the one in which the children should most delight to be. It should, therefore, never be made a place of punishment, by banishing children to it, for any little delinquency, or inadvertence they may have been guilty of; but, on the contrary, a temptation should constantly present itself in the nursery, by making it the seat of their amusement: children will then bear being placed there, without considering it a place of confinement, or one in which they are to experience privations.

378. Among the proper provisions of a nursery, we would reckon a small backgammon table, with men, but without dice. Children, as soon as they are capable of comprehending the subject, should be taught draughts, or checkers. This game is not only highly amusing, but is also very instructive, as it calls forth the resources of the mind in the most gentle, as well as in the most successful manner. It becomes a source of endless amusement, as it never tires, and always instructs.

379. Battledore, or shuttlecock, is also a proper game for the nursery; this gives great agility, as well as great vigour to every muscle in the body. It exercises with but little fatigue; it gives great practical accuracy to the eye, and to the hand; while the

mind is agreeably amused. A large cup and ball should be added to the above articles, as it affords great opportunities for acquiring skill, as well as excites an agreeable emulation to excel.

380. A rocking-horse, of a good size, should, also, be an appendage to a nursery—this article, however, should be considered as a luxury, or, it will become abused by becoming too familiar; it should, therefore, only be introduced occasionally, and that, as a reward for good conduct. This will teach children to find their seat upon a saddle, much easier than they would otherwise do, when they are placed upon the back of a living horse.

381. Slates and pencils, afford much employment, as well as amusement to children—it gives them the habit of making letters and figures very early, as well as calls forth their imitative powers in rude attempts to copy any of the objects of nature, or of art, which may present themselves. For the same reason, we would indulge children in the use of paper and lead pencils.

382. To children of proper age, dissected maps, and Chinese puzzles, or tangrams, are very acceptable, and highly useful: they exercise the memory, elicit ingenuity, excite a laudable emulation, and give the habit of patience and perseverance, in their various attempts to correctly dispose of the one, or discover the various combinations of the other.

383. A quantity of regularly shaped pieces of wood, of various sizes, should also be given to them; these they will arrange, and that sometimes with great ingenuity, into houses, temples, churches, &c., and thus become sincere admirers of each other's skill, in forming these mimic, but evanescent buildings, the destruction of which they ardently wish for, the instant they are formed; and whose sudden demolition, by a stroke of the hand, affords the highest gratification, because they can construct another with almost as much celerity.

384. A set of nine pins and balls of proper size, afford great pleasure to children; and serve to divert, as well as to exercise them; for both of these are highly important, when the weather prevents their being taken into the open air. By affording them opportunities to exercise their skill, they forget they are confined; and thus is prevented that peevish discontent, called ennui, by which they are sure to be assailed, when they have nothing to exercise their muscles, or to employ their minds.

385. We might enumerate a number of other sources of

amusement to children, but, almost every parent will supply the deficiency, as the necessity for variety may present itself. We do not, however, approve of sharp-edged or pointed instruments for children—they can serve no possible use, and may be productive of serious mischief. We have known the loss of two eyes from pointed instruments, and a number of severe wounds from sharp ones.

386. The nursery should be as free as possible from holes or crevices, that the children may not be exposed to partial draughts of air; and that the air of the room may be preserved in winter of a pretty uniform temperature. Attention to this, will enable the children to play in every part of the room, without injury; and it will also prevent the desire to crowd round the hearth, which will serve to diminish the risk of their clothes taking fire, or doing themselves other injury.

387. Too much care cannot be taken to guard against the accident of the clothes taking fire; there is but one security against this, when an open fire-place is the means employed for warming the room; namely, by dressing the children in worsted garments, or, at least, the outer ones; that is, the frocks and aprons. It is but too common to disregard this important precaution; and the accidents are numerous in consequence of the neglect. Many are in the habit of dressing their children in proper materials, as regards their body clothes, but seem altogether to forget, that, if these be covered by a muslin or linen apron, it may take fire, and do serious mischief; it is, therefore, not sufficient, that the under garments be made of woollen materials, if these be surmounted by an inflammable substance.

388. Children that can just run about, as well as older ones, are almost constantly in the habit of having sharp-pointed sticks for playthings; and nothing is more common than to put an end of one of these sticks in their mouths, and run with it when it is in this situation, at the risk of doing great mischief to the mouth and throat, by its being violently driven into them by the force of a fall. My friend, Dr. Physick, related to me a case of lock-jaw, and death, from this cause; and we ourselves have witnessed many less severe accidents from the same source; and we were called, not long since, to an accident of this kind, that created much anxiety, though it did well eventually. A child was running across the floor with a pointed stick of cedar in its

mouth; it fell, and the point was forced through the palate, which it nearly separated. It produced much suffering, from an almost total inability to swallow from the inflammation that was excited.

389. It is also wrong to permit children to run about the nursery barefooted, or in their stocking feet; especially, if the floor be covered by either carpet or mat; as it every now and then happens that they run into their feet, needles, pins, nails, glass, or other sharp substances, that may be concealed in the substance of the floor covering.

390. The introduction of glass into the nursery should be avoided as much as possible; as a constant liability to accident is incurred, by its being broken, and strewed over the floor, and by the children treading upon, or handling the pieces.

391. We cannot recommend too earnestly, the frequent ventilation of the nursery. The best possible method to purify the air, is by the admission of fresh air from without; this should be done at least daily, by opening the windows and doors for a short time. During the process of ventilation, however, the children should be removed from the nursery, or protected by a skreen, from the immediate current of air; but the former is the better plan, as children are not always obedient to the wishes of their nurses, and may expose themselves very improperly. This ventilation should not be performed, if the weather be wet; as the damp air might prove more injurious, than the air intended to be removed.

392. No sand should be strewed upon the floor of the nursery; as it is always inconvenient to walk upon, as well as furnishing a great quantity of very fine sharp dust, which is very injurious to the eyes, when the floor is swept, or it is otherwise disturbed.

393. Some have recommended fumigations of vinegar, and other substances, for purifying the air; this is neither necessary nor availing, especially as we can always command a much better article, namely, the fresh external air.

394. The air of a nursery should be maintained at a pretty uniform temperature—for this purpose, a thermometer should be a part of the furniture of every well appointed nursery. It should be placed remotely from the fire, and not to face it; as it may, if so situated, give a false result, as it will be necessarily affected by the radiant heat of the fire. It should never exceed

66 or 67° of Fahrenheit. The thermometer should be placed out of the reach of the children, or it will quickly be destroyed.

395. We are fully persuaded that the excessive heat of nurseries has occasioned a great mortality, especially among very young children. In the first place it over-stimulates them; and, in the second, renders them so extremely susceptible of cold, that every draught of cool air endangers their lives. They are maintained in a constant state of perspiration, which is frequently checked, by an exposure to even an atmosphere of moderate temperature.

396. Children should never be left alone—their helpless condition requires constant care, especially when very young. They should never be left to themselves while feeding, as they may choke for want of proper and timely assistance; nor should they be placed upon a chair or table, unless they be well watched. The children of the poor very often meet with serious accidents, from the necessity the mothers are frequently under, to leave them for a time to take care of themselves. A friend lately related to me a fatal accident, arising from this cause, which may, perhaps, serve as a warning to those who are in the habit of leaving children alone, when there is absolute necessity to do so. A poor woman, who had been spinning upon a large wheel, was obliged to leave the room for a short time. Before she went, she placed her child, (an infant who could not walk,) upon the floor, some distance from the wheel. She presently heard something fall, and her child to scream violently—she ran instantly into the room, and found the poor infant transfixed to the floor, by the spindle of the wheel passing entirely through its body. She supposed the child had pulled at the thread she had been spinning, which was sufficiently strong to upset the wheel.

397. Animals should not be left with children when alone, for both dogs and cats may be provoked to do mischief, if too rudely assailed by them. Cats, by common consent, are driven from the sleeping places of children, under an apprehension that they will “suck the children’s breath.” If this phrase mean any thing, it is that the animal can produce suffocation, by arresting either the ingress or egress of the air—a thing altogether impossible, unless the animal should have sagacity enough to stop both the mouth and nostrils at the same time; for, should the mouth be closed, respiration can be carried on through the nos-

trils; should the nostrils be obstructed, it will go on through the mouth.

398. When a night lamp is burned, it should always be placed in the chimney-place, or immediately before the door of a stove, that the smoke may be carried off. If this be not done, the air of the room becomes loaded with lamp-black, to the great injury of the lungs.

399. It is not a matter of indifference, in which direction the light falls upon the child; young children eagerly seek it with their eyes; and if it do not fall directly upon the face, the eyes will be strained to the direction in which it is strongest. In consequence of this, the muscles will contract the habit of moving the eyes in an oblique direction, which may terminate in squinting. On this account, all objects capable of attracting the attention of the child from the vivacity of their colours, should never be presented to them sideways, or immediately over their heads.

400. We have already forbidden washing or ironing, or any other operation being carried on in the nursery, which shall load the air with vapour; as it will necessarily expose the children to colds, coughs, or other severe affections of the lungs.

PART II.

ON THE PHYSICAL TREATMENT OF NEW-BORN, AND OLDER CHILDREN, &c.

401. For the sake of convenience, as well as of perspicuity, we shall divide the consideration of the physical treatment of children into the different and marked periods of their lives; that is, from the moment of birth, to the period of puberty. These divisions will comprise, 1st, the period from birth to that of weaning; 2dly, from that period, to second dentition; 3dly, from second dentition, to the period of puberty.

CHAPTER I.

FIRST PERIOD.

402. Every child born alive, and at, or near the full time, cries as soon as the surrounding air gains free admission into its lungs. This grateful sound repays, in an instant, the suffering mother, for her pain, her anxiety, and her peril; or, at least, it produces a temporary oblivion of them. But, unaccustomed to the sound, and having all her life attached the idea of pain to the exercise of the functions of crying, she becomes alarmed, should this effort be continued any time, and most anxiously inquires “why the child cries so violently?”

403. We will endeavour to explain, for her sake, this interesting question. The child, while in the womb, is surrounded by water, and is enclosed within walls, if we may so term them, of limited extent. In the first, it floats securely, as it has no use for its lungs, while thus imprisoned; and against the second, it

oftentimes tries the strength of its limbs, with much advantage to itself, if not always with comfort to its mother. As the medium in which it floats is of the same temperature as that of its mother's body, it may be considered as constantly living in a warm bath. The uses of this bath are, 1st, to preserve the child, as much as possible, from external accidents; 2dly, to give entire freedom to all its movements; 3dly, to maintain it in a medium of uniform temperature; and, 4thly, to preserve the suppleness and sensibility of its skin.

404. When the little stranger is ushered into the world, how changed are all its *relations*, and all its *necessities*! It now becomes almost an independent, though a most helpless being; for its immediate connexion with its mother is at once cut off; instead of a bath of most grateful temperature, it is plunged into an atmosphere almost always a little lower than the one it has been in the habit of revelling in; and sometimes into one, very much below it: and instead of the confined surface against which it was wont to exercise its sense of touch, it is now thrown comparatively into illimitable space. The first of the changes we have mentioned, makes a powerful, and doubtless, sometimes, a painful impression upon its extensive surface of skin. Its little muscles are necessarily thrown into action; and as a consequence, the chest becomes expanded, and the air by which it is now surrounded, enters its collapsed lungs, and the action of "crying," is instituted.

SECT. I.—*Of Crying.*

405. "Crying" should be looked upon as an exercise of much importance, both to the immediate, and mediate advantage of the being. *Immediately* it is useful, by facilitating the passage of blood through the lungs, where, until this moment, it had been unaccustomed to travel; but which is now a *sine quâ non* to the existence of the being; 2dly, it serves more effectually to the expansion of the air cells of the lungs; thereby presenting a larger surface for the action of the atmospheric air, from which the most important consequences are to flow; such as the due oxygenation of the blood, on which depends to a greater or less extent, every healthy function of the system; the unloading

of the system of certain materials, the retention of which would be highly injurious; and thus contributing either to the direct or indirect production of animal heat. The *mediate* advantage of "crying," consists in its giving strength and a proper tone to the organs employed in the act, by thoroughly expanding the air cells of the lungs; thus early and constantly accustoming them to being stretched, at a period the most favourable for this extension; and, at the same time, freeing the lungs from mucus, that is constantly pouring into these cells; and thus preventing injurious accumulations.

406. It may be farther observed, on the subject of "crying" that this act is not always an expression of pain; it is intended very often as an appeal to the tenderness of the mother, when the child is impelled to make its necessities known—hunger and thirst, or sometimes, upon much more important occasions to itself, namely, uneasiness, from want of change of posture: for a constrained situation, renders the child not only uncomfortable, but is really injurious to it, if too long continued. The poor infant is too often condemned to one position, provided it express no objection to it by its cries; the consequences are, 1st, that the circulation is much impeded on the side on which it lies, from the compression the parts must suffer from the weight of the child itself; and, 2dly, its limbs are unequally exercised, especially when the mother, or nurse has a *favourite side* for the child to rest upon—this election should never be suffered, for reasons too obvious to need mention. We may, however, observe *en passant*, that the child should not be permitted to continue longer than an hour, or two at farthest, in any one position; the fear of awaking it, should never prevent an attention so important to its health. Besides, we know from ample experience, that the child very soon becomes accustomed to the operation of turning, or changing its position, and will be almost sure to express the relief this alteration affords, by instantly putting all its little limbs upon the full stretch, and again "addressing itself to sleep."

407. We would particularly warn mothers and nurses against placing the child upon its back; as this position may be followed by very serious consequences, if it chance to throw up the contents of its stomach—we once knew suffocation from this cause.

408. In very young children, there is a rapid accumulation

of the excitability of the system, arising from their passive condition, which requires the employment of the muscles, to keep it down to the healthy point; and "crying" is the "waste gate," to an excess of excitability. This act, therefore, is more easily provoked in children, that the equilibrium of excitement, and excitability may be preserved. "Crying" is most useful, in many instances, for the same reason, even to the adult—who has not witnessed the relief afforded by a gush of tears, to an oppressed heart!—and, in our practice, we take advantage frequently of this circumstance, by permitting, nay, sometimes soliciting "cries," at the trying and important moment of a woman becoming a mother.

409. To show, farther, the importance of this act, by creating a diversion of the excitability and excitement, Dr. Rush used to relate to us in his lectures the case of a gentleman in South Carolina, who was about to be cut for the stone. This gentleman thought it beneath the dignity of a man, to express pain upon any occasion; he, therefore, refused to submit to the usual precaution of securing the hands and feet by bandages, declaring to his surgeon, he had nothing to fear from his being untied, as he would not move a muscle of his body—and he truly kept his word; but he died instantly after the operation, from apoplexy. In this case the excitability and excitement were too much accumulated in the brain; and it yielded to their influence from the want of some outlet for the one, or diversion for the other.

410. But, in attaching so much consequence to "crying," we are not to be supposed to advise either the provoking of it, or perpetuating it, by artificial means, nor to consider this act as always expressive of either pain, or uneasiness, or to require the interference of the mother or nurse; for, on the contrary, we are fully aware how readily a habit of crying is generated, by a too prompt attention to the demands of the child; and, also, that the most clamorous children are those you are the most solicitous to appease. Crying may, however, be indicative of disease; it will, therefore, be considered again under this head.

SECT. II.—*Of Sleep.*

411. New-born children may be said to sleep constantly; their waking moments furnish but exceptions to the rule. This is a wise regulation of nature, since it permits a renewal of the ex-

citability, as fast as it is expended. In this early stage of life, the gastric, the arterial, and the absorbent principles, are much employed for the purposes of digestion, of secretion, of deposition, or growth; and, consequently, much excitability is required for the various contingencies now mentioned. And, it would seem, in general, more is generated, if we may so express ourselves, than is absolutely necessary, as it has to be carried off, as just noticed, by occasional crying, &c. This passive condition of new-born children is highly favourable to the healthy expansion of the body, for, where it is interrupted by some derangement of the nervous system, which declares itself by too frequent crying, and watchfulness, the child ceases to thrive.

412. It is some time before the nerves of hearing appear to be affected by sound; hence, we see children almost insensible to loud noises, even weeks after their birth. This appears to be an especial care of Providence, that the important state of sleep should not be too easily interrupted. This sense, however, after a time, becomes exquisitely sensible; and, if it were to be too much indulged, by not permitting the child to become familiar to it, and that as early as possible, much mischief would arise.

413. We have often been consulted upon this occasion: over careful mothers think, that sleep should *never* be abridged, nor interrupted; they, therefore, keep their nurseries so extremely silent during the sleep of the child, that it is constantly awakened in much alarm, whenever any sudden or unexpected noise assails its ear: we have known children many times rendered so sensible to noise during sleep, as to be roused by even a light tread upon the floor; and, when a louder noise had been made, to awake almost in convulsions, and always in extreme fright, and loud crying. To guard against these evils, and they are evils of much greater magnitude than might at first sight appear, since, in many instances, they have been perpetuated through life, we constantly recommend, as a practice in all nurseries, to let the child fall asleep in the midst of noise, and never to consign the room to strict silence, as a precaution, during the whole of its nap. If children be habituated to fall asleep while surrounded by noise in the nursery, and not have that noise interrupted by design during the continuance of sleep, they will soon support any common degree of it, without the least agitation, or other inconvenience.

414. Much advantage is derived from this plan—1st, a morbid sensibility of the organs of hearing is not generated; consequently, the child will be exempt from all the evils, and inconveniences this condition would inflict; 2dly, the functions of the body will be better performed, since they will not be interrupted by the repeated wakings of the child; 3dly, the child will derive all the advantages which an undisturbed sleep will give; 4thly, we can better calculate on the duration of its sleep; 5thly, it will save its mother or nurse, much unnecessary anxiety, as well as trouble.

415. If the habit of stillness during sleep have been established in the nursery, the quicker it be broken the better; this, if properly attended to, can be done in a short period; 1st, by obliging the child to fall asleep during a moderate noise, by not abstracting the noise from it—it will contend, for some little time, but not long; 2dly, by continuing the noise during the period of sleep: by this plan, it will soon become familiar to it, and after awhile may even sleep better than before.

SECT. III.—*Of the Necessities of the Child*

416. The necessities of the child, are no less remarkably changed than its relations. It must now breathe a pure air, or it dies; it must now receive and prepare food by the operation of its own stomach, for the purposes of its system, or it sinks; it must now be protected against the variations of temperature, or it perishes. In a word, a new kind, of life commences from this moment; and, that this may be preserved in the best possible manner, is the end and object of Physical Education. It will now be easily understood, why this species of education should commence at the period we have assigned to it; since, it will be obvious, that the more perfect the health of the individuals who marry is, the better the foetal life has been conducted, the more successful will physical agents be, in properly developing, and perfecting the animal life, which is to follow.

417. It will be seen that the body is now to be subjected to the influence of entirely new agents; and these may be considered under several distinct heads, as follow—1st, Air; 2dly, Food; 3dly, Clothing; 4thly, Exercise; 5thly, Cleanliness. The agents we have just enumerated exert a prodigious influence upon the wel-

fare of the being, on whom they are to act: their operations commence with the first moments of animal life; and they are perpetuated, under one modification or another, to the last period of human existence. We shall, therefore, take up the consideration of each of these powers, in the order we have placed them—and, first, of Air.

CHAPTER II.

OF THE AIR.

418. By the air, we mean that immense mass of permanently elastic fluid, which surrounds the globe we inhabit. This substance is absolutely essential to the continuance of life in every species of animal; and its effects upon the human system are healthy, or otherwise, in proportion to its purity. But this condition must be constantly varying, as it may lose one of its principles, or as it may receive an excess of another; or be loaded with noxious exhalations, from vegetable, animal, or mineral substances, especially in great cities.

419. Modern chemistry has done much to illustrate the condition of our atmosphere, by pointing out the means by which it retains its vital purity, as well as by informing us in what this vital purity consists, and the manner in which it becomes deteriorated. Until the discovery of oxygen as a component part of our atmosphere, it was altogether conjecture, as to what it lost or gained, by combustion, respiration, or vegetation. The phenomena of combustion and of respiration, were well marked and described, by the ancients; but their reasoning upon the causes of the changes which the air underwent by these processes, was altogether founded upon assumed principles; and the world was not much enlightened upon this subject, until oxygen was simultaneously discovered, by Scheele in Sweden, and Priestley in England, to be a constituent of the atmosphere;* though Mayo,

* It was soon found, after the discovery of oxygen, that this substance is essential to combustion; and, very quickly after, that it is equally so to respiration.

two hundred years before, had nearly arrived at the same discovery and conclusion.

420. For the discovery of the chief means by which the atmosphere maintains its purity, we are indebted to the experiments of the ingenious Dr. Ingenhouz. He found, that plants of every kind, while growing, and acted upon by the sun, yielded this salubrious air—the deadly nightshade, and the most innocent plant, alike gave out this gas.

421. There is, therefore, every reason to believe, that the atmosphere in its extended sense, is as pure now as in the days of the patriarchs. If, then, life be shorter now than it was at that period, (a circumstance, perhaps, wanting proof,*) it is certainly

Priestley made many decisive experiments upon this point—and, since the term of vital air was given to it, as one of its synonyma.

* Huffland says, “It is commonly believed, that during the early periods of the world, the lives of its inhabitants were more youthful and more perfect; that these primitive men had a gigantic size, incredible strength, and a most astonishing duration of life.” “Some have not hesitated seriously to ascribe to our forefather Adam, the height of nine hundred yards, and the age of almost a thousand years. But the rational and accurate investigation of modern philosophy has converted the supposed size of giants, found in different parts of the world, into those of the elephant, and rhinoceros, (and, we may now add, the mammoth,) and acute theologists have shown, that the chronology of the early ages was not the same as that used at present. Some, particularly Hensler, have proved, with the highest probability, that the year, till the time of Abraham, consisted of only three months; that it was, afterwards extended to eight; and that it was not till the time of Joseph, that it was made to consist of twelve. These assertions are, in a certain degree, confirmed by some of the Eastern nations, who still reckon only three months to the year.” “But, however much calculators may differ in the supposed ages to which antediluvians may have attained, we have strong reasons for believing, that in the time of Moses, the chronology was, perhaps, absolutely the same as at the present moment. This opinion, however, we must confess, is deduced rather from *circumstances*, than absolute facts; and relies for its support, almost altogether, upon analogy. Thus, Moses informs us, “The days of our years are threescore and ten; and if, by reason of strength, they be fourscore years, yet is their labour sorrow; for it is soon cut off, and we fly away.” Ps. xc. Again, in the time of David, five hundred years after Moses, when Barzillai excuses himself for not visiting the royal palace at Jerusalem, he observed to the king:—

“I am this day fourscore years old, and can I discern between good and evil? Can thy servant taste what I eat, or what I drink? Can I hear any more the voice of singing men, and singing women? Wherefore, then, should thy servant be yet a burden unto my lord the king?”—*American Quart. Rev.* No. 16, p. 364.

From this it would seem, that at that time the age of fourscore was an excuse for the neglect of ceremonious duties; since it appears to have been attended

not owing to a defect of purity in the general atmosphere. It must have its foundation in circumstances, independently of any general atmospheric impurity.

422. These circumstances, we are of opinion, are the changes in the habits and manners of mankind at present, from those in the time we have just alluded to. Formerly, man was simple in his mode of life, and laborious in his habits; his occupations were confined very much to those of the hunter, the shepherd, or the tiller of the earth.

423. From this it would seem to be ascertained, that air may be either pure, or be more or less deteriorated, as it may be subjected to such causes, as may be capable of altering its chemical, or sensible properties. The chemical properties of the air are principally affected by combustion, and by respiration; and the changes which it may undergo, are in proportion to the extent or degree of the one, or the continuance of the other.

424. But, to make this better understood by those who have never devoted any time to the subject, it may be necessary to state, that the "atmospheric air" is principally composed of two distinct substances or gases, in certain proportions to each other. One of these is called oxygen, the other nitrogen. It is the former which maintains combustion and supports respiration; for these processes can be continued as long as this exists in the combination, and the perfection of either will depend upon the due proportion of oxygen. It must, however, be remembered, that an excess of oxygen does not do any material injury to either.

with all the defects, now common to the age "of fourscore:"—impaired moral perception; diminished taste, or appetite; loss of sight; and hardness of hearing. It would, therefore, be safe to conclude, that longevity was not greater then, than in our own times. Indeed, we might even plead improvement, agreeably to the following statements:—"The census, established from time to time in England, affords us information of an unquestionable kind. The first actual enumeration of the inhabitants, was made in the year 1801. It gave to England and Wales, a population of 9,168,000, and a mortality of 204,434, or 1 in 448. The second was made in 1811. The population was then 10,502,900, and the mortality 1 in 50. And the third and last, which took place in 1821, gave an enumeration, according to Mr. Rickman, (who was appointed by the secretary of state for the home department, to digest and reduce into order the population returns, and by the privy council to arrange the parish register returns,) of 12,218,500, and a mortality of 1 in 58."—And this might be extended to other countries.—*Amer. Quart Rev. No. 16; p. 388.*

425. Now, as combustion and respiration are always going on in the habitable world, it follows, there must be a constant loss of oxygen; and, if there were no sources or means, by which it could be supplied, the "atmospheric air" would be constantly suffering deterioration, even until it were exhausted of its vital principle. But a kind Providence has permitted a supply of oxygen in as great proportion as it is taken from the atmosphere; and by new processes, its qualities in a general sense are maintained at all times, in pretty nearly the same degree of purity.

426. The means by which the lost oxygen is supplied, are no less certain than extensive; thus, all the living vegetable world emit it, as long as they are operated upon by sunshine; and the decomposition of water furnishes another extensive source of supply.

427. From what has been said, it will readily appear, that combustion and respiration, which is, in fact, a kind of combustion, tend to diminish this vital property of the air; and, in proportion to that loss, it is unfit to maintain either: it must be, therefore, evident, that the air which has been once breathed, is less fit for another operation, in the exact proportion to the diminution of the oxygen it may have contained; and, if this process be sufficiently long continued, it will be entirely exhausted, and in its place will be found a quantity of carbonic acid gas, equal to the removed quantity of oxygen, combined with the usual or original bulk of nitrogen; neither of which is respirable alone. Hence, the air of great cities is necessarily less pure than that of the surrounding country—1st, by having more causes constantly operating to destroy its chemical, and to alter its sensible qualities; and, 2dly, by having fewer means to restore the expended oxygen, and to abstract from it its carbonic acid gas, &c.

428. Independently of the greater consumption of vital air, and the inadequate means in great cities to supply it, there are other causes constantly operating to render it still more impure, than respiration alone. Combustion, fermentation, and exhalations from putrid and other bodies, all tend to deteriorate the already too much impaired air; and, consequently, will render cities less healthy than the surrounding country, and perhaps, pretty constantly in the proportion we have mentioned.

429. Therefore, it is no way surprising, that the mortality

among children should be excessive in cities, since their stamina are incapable of supporting either the loss of so much oxygen, or the influence of the various miasmata by which they are constantly surrounded—hence, agreeably to calculation, more than one-half of those who are born, die before the third year. It is true, we must not attribute this excessive mortality exclusively to the causes just mentioned; there are others constantly operating to produce this effect, especially among the poor; such as bad nursing, and, perhaps, worse feeding.

430. Rousseau, with a mixture of truth and prejudice, inveighs bitterly against men shutting themselves up in cities—he says, “Mankind were not formed to be heaped together in shoals, but to spread themselves over the face of the earth, to cultivate it. The more they assemble together, the more they corrupt each other. Man is, of all animals, the least adapted to live in herds. Flocks of men, like flocks of sheep, would all perish in a short time. Their breath is destructive to their fellow creatures; nor is it less so in a literal, than in a figurative sense.” In these few sentences we see at once his plan of education, and the impossibility of reducing it to practice; for all could not become cultivators of the soil, any more than they could be all shoemakers or tailors. And, though we admit that cities are less healthy than the country, yet all men could not live in the country; and cities ever have, and always will be built, from the very nature of things. Nor is it difficult to foresee the consequences, should the genius of man tempt him to spread himself widely over the face of the earth, and all become cultivators of the soil; other evils would necessarily arise, which would be equally destructive of human life.

431. Look at man in this condition, wherever he may be found, and what is it we see? Neither a more rapid increase of population, more brotherly love, greater longevity, nor greater improvement of the soil! And, though we admit there may be a greater exemption from disease in the country, it does not secure a greater share of either happiness or population. Indeed, if we may credit what is found in books upon the relative conditions of man in a savage and in a civilized state, it would appear, that cultivation of the mind is even favourable to longevity; and though there may be more general health in a savage state, there is less length of life. The instances of longevity

among our aborigines are fewer, than in refined life; so that what one gains by a greater freedom from disease, the other acquires by an increase of years. Rousseau's scheme of happiness for man, is, therefore, altogether Eutopian.

432. In this country, the evils of cities are more limited than in those of Europe: they are, first, less populous; 2dly, they are better ventilated, by the breadth and regularity of their streets; 3dly, there are much fewer manufactories carried on in them; 4thly, there is less poverty, or, in other words, there are greater facilities of life.

433. During the summer, our cities become unfriendly to our very young population; and much benefit is derived by carrying them into the country, when health has failed in the city. But this favourable change is not owing altogether to the purity of the country air; much depends upon taking children from the remote causes which produced the disease. That this is the case in many instances, we are entirely convinced by the fact, that children attacked with disease in the country, are very often benefited by their being brought to the city—this is familiar to every practitioner, as well as to very many others who are not physicians.

434. We are also certain that the country air is not made the best possible use of, by those who inhabit cities; for no sooner does the warm weather commence, than they leave the city; and this when the children are in perfect health. In consequence of this, they become accustomed to the air of the country, as well as liable to any epidemic, or local influence that may exist there. The object of leaving the city is now defeated; since it cannot preserve health to those who fly to it for refuge; and it is found *cæteris paribus*, as difficult to cure a disease originating in the country as in the city—nay, as we have observed above, the patients are sometimes obliged to return to the city to get well.

435. We are persuaded, those who profit most by the change of air, are those who repair to it as a remedy: children who have suffered, or are about to suffer from the heat of our cities, derive immediate, as well as permanent advantage from the change; but when taken to the country early in the season, they appear to us to be as liable, or nearly as liable to disease, as if they had remained in the city. Nor is this to be wondered at: they are surrounded by the remote causes, which produce disease in the country; (for no one will deny that the country is not ob-

noxious to diseases as well as the city) besides being liable to exposure to dews, both in the morning and evening, under the presence, that a walk early in the morning, as well as in the evening, is wholesome; as if wet feet and draggled skirts, would not destroy all the advantages of these early and late walks. They are surrounded by the temptation of fruit in all stages of immaturity, which we well know they do not resist; but, on the contrary, they literally cram themselves to surfeit, more than once in the twenty-four hours. Need we wonder at their being attacked by disease?

436. We have every reason to believe, that were proper attention bestowed upon children during the period of teething; if proper regard were paid to their food; if due pains were taken with their clothing; and if a well-regulated system of exercise were established; there would be much less occasion for country excursions, for the benefit of health. We shall attempt to explain these various and important topics in the course of our present work, and in such a manner, as will make the putting of them in practice easy to every understanding.

437. Rousseau, in his ardour to recommend a country life, becomes, like most speculators upon human conduct, inconsistent with himself. His first, great object is, to oblige every mother to suckle her own child; yet he says, they must "send their children to regenerate themselves in the country." Is it practicable for every mother to retire to the country during the first two or three years of their children's lives?—or to desert their home and families, as her children may present themselves? If they cannot do this, they must, agreeably to this scheme, commit the charge of their children to hirelings; the very thing he so loudly deprecates. Of the same nature is his advice to pregnant women; when he recommends them to lie-in in the country, instead of returning to the city for this purpose. How few could do this without creating greater evils, than it is even intended to cure? But to return.

438. The proportions of these gases in forming the atmosphere, are as follows: in one hundred parts of atmospheric air, there are of

Oxygen, 20 parts,
Nitrogen, 80 do.

100

These proportions, we are aware, are not rigidly exact; but they are so nearly so, as to render a mention of their fractions unnecessary, when treating this subject in a general manner.

439. It must, however, be recollected, when we speak of an impure air or atmosphere, we are not to be supposed to mean, strictly, a mere diminution of oxygen; for the air may be so filled with impurities as to render it highly dangerous to be breathed without its oxygen being diminished in the smallest degree. Thus, marsh miasmata, the contagious principle of small-pox, measles, &c., may be floating in an atmosphere which may have its oxygen in full proportion. And it must be farther observed, that a full proportion of oxygen does not, by any means, prevent the influence of these noxious qualities upon the human constitution. It is, therefore, necessary to distinguish between an impure air, and an irrespirable one; the one giving rise to disease, the other preventing respiration.

It may be asked, if this be true, of what advantage is the oxygen of the atmosphere to the human constitution, if it have not a conservative power? The answer is as easy as it is satisfactory. Experiment has clearly proved—1st, that this substance is absolutely necessary to respiration; and respiration is essential to life; 2dly, that this gas performs also important offices within the system; for, should the blood not be duly supplied with this fluid, it would be rendered unfit for the purposes of the circulation; consequently, all the functions dependent upon this process, must be imperfectly performed, and life itself would soon cease.

440. But it would be an error to suppose that the more there is of oxygen, the better for animal life. This is, by no means, true: since this gas is so ethereal and stimulating, as, if too freely indulged in, to make us live too fast. We can give abundant proof of this in the air of the Glaciers, which is of the greatest purity, but is rather prejudicial to health. In it we consume too fast, if we may be allowed to retain the figure, that respiration is a combustion: and the temperature is also too variable.

441. Besides, Switzerland, the highest land in Europe, furnishes fewer instances of longevity than Scotland; and the causes of this are obvious—1st, the atmosphere, at all great heights, is too dry; consequently, too much moisture is detracted from the body; as its capacity to receive our fluids, and hold them in

solution, is in proportion as it may be free from them; 2dly, the variableness of temperature, which always obtains in high situations, is extremely prejudicial to the duration of life.

442. On this account, islands and peninsulas, are more favourable to long life, than continents. For the temperature of the atmosphere is much more certainly preserved in the former than on the latter; and the sensible qualities of it, have a very decided influence upon animal life. The weight and temperature of the air, and especially the uniformity of these, have a great effect upon the human body. Wherever these are the most uniform, it will be found, (*cæteris paribus*,) most favourable to old age—hence we are told that men live longer in the islands of the Archipelago, than in the neighbouring countries of Asia; in Cyprus, than in Syria; in Formosa, than in Japan and China; and in England and Denmark, than in Germany.

443. From what we have said, it would appear, that the healthfulness of a place is not to be determined by the purity of the air; or rather by the quantity of oxygen which may enter into its composition; therefore, something else is required, as we have already attempted to show: such as location, soil, cultivation, &c. And, farther, that oxygen, as before suggested, cannot interrupt the action of various poisons, especially such as may be considered the remote causes of fever. Yet this fluid is indispensable as a constituent of the air; and though its presence cannot protect against disease, yet its absence is certain death to the animal that is obliged to breathe an atmosphere from which this has been withdrawn, or is already consumed.

444. Hence, great cities are so unfavourable to the extension, or even the continuance of human life. It is calculated that in London, Paris, Vienna, and Berlin, between the twentieth and twenty-third part of the population die annually; while in the surrounding countries, the mortality does not exceed a thirty-fifth or fortieth part. This difference in the mortality of the respective places just mentioned, is, however, in a great measure, owing to the destruction of too large a portion of oxygen. If the population become still more dense, the mortality is still greater; and when many are crowded together, as in ships, and prisons, the destruction is yet greater; and if the quantity of air be still more limited, the effects are awful; as was witnessed in the Black Hole of Calcutta, where a hundred and forty-six men

were confined in a narrow space for twelve hours, out of which number a hundred and twenty-three died.

445. It is, therefore, evident, that no greater mischief can be offered the human lungs, than the want of a due supply of oxygen; consequently, the cruel and absurd practice of covering the head of a new-born child, or very young children under the bed clothes, cannot be too severely reprehended. The consequences of this practice can readily be anticipated, from what has already been said; though it may carry conviction more readily, to explain the changes which constantly take place, when the child is so circumstanced. In placing a child under cover in the manner just mentioned, it must, necessarily, be placed in a space with a limited quantity of air. Of this quantity, a certain portion is drawn into its lungs by every inspiration, and returns it again with a loss of a part of the oxygen; the place of the oxygen is supplied by an equal quantity of that noxious, or irrespirable gas, called "carbonic acid gas." Another, and another quantity is taken in, with precisely similar results, until by the repetition of this process, every particle of oxygen is abstracted, and its place as constantly supplied by carbonic acid gas; and this not being respirable, the child dies, unless it be timeously exposed to fresh air.

446. An objection as serious may be made to the habit of many woman, of keeping the child at the bosom all night, with its head closely covered with the bed clothes: the objections just urged, will operate with equal force in this as in the former instance; as there is constantly emanating from the surface of every living body, a sensible and an insensible perspiration, as well as an extrication of carbonic acid gas. If the body be covered closely, and the escape of this gas prevented, the air surrounding the body, thus covered, is very soon found unfit for the purposes of respiration.* Therefore, the child is oftentimes plunged into an atmosphere already rendered impure by the body of the mother or nurse, and, consequently, in a short time, has less oxygen than is necessary for the purposes of respiration; and it

* If a candle be placed beneath the bed clothes alongside of a person that has been closely covered all night, it will be quickly extinguished, from the excess of carbonic acid gas.

perishes even at its mother's bosom. We have witnessed four instances of death from this cause.*

447. It will be easily deduced, that every deterioration of the air, must be injurious to the child, precisely in the proportion to the degree; consequently, the utmost care is required, that no unnecessary process by which the air can be injured, should be carried on in the room or nursery, in which the child is kept. Hence, the decided impropriety of too crowded a room; of washing, drying, and ironing the things intended for the child or children's use; permitting the wet or soiled articles taken from the child to remain long in the room; burning of charcoal, or other combustible substances outside the chimney place; cooking of the various articles for meals; the too frequent wetting of the floor; *smoking of tobacco*; burning of oil, with too long a wick, &c. In a word, the nursery should be, if possible the purest place in the house. We have had occasion already to advert to this subject, when treating on the nursery.—(350, &c.)

448. We cannot well condemn, too severely, the filthy practice, in too many nurseries, of drying the wet and soiled articles in the room with the child. If an article must be used a second time after having been once wetted, it should, at least, be removed from the nursery for the purpose of drying. But a much better practice would be to consider a well wetted diaper as unfit for reapplication, until it has been washed. The same may be said of every other article belonging to the child, that has been wetted by its discharges; as its petticoats, sheets, bed, mattress, &c.

449. The value of a pure atmosphere, does not cease at any period of the child's life; it is highly important at all times; though, perhaps, not so immediately essential, as during the first few days of its existence, as it is then less able to bear an impure air, than when it becomes older.

If the directions we have just given be attended to, many sources of impurity will be removed, yet it will not amount to

* We cannot better illustrate the injurious consequences arising from this practice, than by stating, that in Great Britain, alone, there perished forty thousand children, by the practice of nurses permitting the children to sleep near them, from the year 1686 to 1800.—*Friedlander's Education Physique.*

absolute security. Therefore, frequent ventilation is of much consequence; by this the great mass of the air is removed, and its place supplied by that of a better quality. In doing this, however, some care is necessary, or the child may receive injury, by either partial streams of air passing over it, or by having one of too low a temperature applied to it.

SECT. I.—*Of Temperature.*

450. Children of tender age, should never be suddenly subjected to great changes of temperature,* whether the change be from a higher to a lower one, or the reverse; therefore, children born in a cold climate, and in cold weather, cannot safely be placed suddenly in a very cold atmosphere, without great and immediate risk. It is true, we may guard their bodies against the influence of cold so effectually as to receive no injury; but we cannot protect much more important parts, with the same certainty—for their lungs must receive the cold air within them; and, hence, the danger.

451. But the danger just alluded to, does not arise so much from the immediate effects of cold air upon these organs, as from the subsequent action of the warm air, in which they must necessarily sooner or later be placed. Violent reaction soon follows the state of torpor, which the cold air imposed upon the lungs; and inflammation, catarrh, or cough, will almost certainly be the result.

452. A sudden attempt to “harden a child,” as it is called, in cold weather, is but another determination to see how much a child can bear, without dying under the experiment. This scheme, a scheme founded neither on reason, nor experience, has had, to our certain knowledge, too many victims, for us not to caution parents against the preposterous and dangerous practice.

453. We would ask, what has given rise to so decided a preference in favour of the system of exposure? This question would be difficult to answer, upon rational principles, or correct observation. It has proceeded, without doubt, from some com-

* Nor should their eyes be exposed to sudden and strong light. We have frequently seen severe inflammation of these parts, follow such incautious conduct.

mon fact relating to the effects of cold; as the general bracing power of a pretty low temperature upon the body; but without taking into view the various circumstances which were essential to its favourable operation; for instance, with the mercury down to 10° of Fahrenheit, let two men, (every circumstance being equal, but that of clothing,) engage in such an atmosphere, at any kind of active employment for a certain number of hours; the one to be sufficiently clad to prevent, when at rest, any very great inconvenience from the cold; and the other, not so well protected; the latter, in this case, would require additional exercise, to prevent suffering. At the expiration of the assigned period, what would be the respective situation of these men? The one would be found to have performed his task without difficulty, or much fatigue; the other would be seen to have performed either less work, or be more exhausted; for, in order to do the same quantity of work as his companion, he would have to labour much harder, to keep up the same degree of animal heat; or he will have performed less, and have suffered more from the benumbing effects of cold. This is found to be the case also with animals, especially horses. Where, then, is the advantage of this sudden attempt at bracing by cold? Besides, as regards the human constitution, and especially that of children, it is agreeable to the observations of all medical men, that those children who are properly and sufficiently clad, are freer from disease, than those injudiciously exposed for the purpose of hardening them.

454. But it is, also, undoubtedly true, that those who may have survived the ordeal of ill-conducted winter exposures, are generally best confirmed in their after health; but this only proves the strength of original constitution, since it stood the severe tests to which it had been exposed; but we are not informed of the fifty-fold failures of the experiment. Let us apply this reasoning to the effects of extreme heat upon the constitution, and see how ill the analogy, though correct, will support the practice of "hardening," or how few would be willing to have recourse to the trial. It is a matter, notorious to every one, that the emigrants to the West India islands, or other hot climates, who survive the "seasoning," enjoy, for the most part, the best possible health; and perhaps, these places will furnish as many instances of longevity, as almost any other parts of the world; but would any one give these instances as proofs of the healthiness of

an exposure to a tropical sun, or as a means to acquire long life? Would not any one, to whom such a proposition were made, directly declare, that the great number of victims, to the few instances of success, are entirely concealed!

455. It would seem to be a point acknowledged by all writers upon the treatment of children, that extensive and deadly effects are constantly witnessed, from the variability of climate, and from unnecessary, or from unavoidable exposure in cold weather. The great increase of acute, as well as of chronic affections during the winter, would seem to confirm this impression. In our mutable climate, the consequences of unavoidable exposure of the children of the poor to its inclemencies, are familiar to the observation of every one who may have felt an interest in the claims of humanity; and so far as we can collect from these observations, the opinion appears to be concurrent, that much suffering, great increase of disease, and an augmented mortality, are the constant results. Let us then hear no more of the arguments derived from this class of people, in support of the unstable hypothesis, that the health of the children of the poor is a proof of the advantage of exposure to harden the body against cold, or to confirm the system against disease.

456. We are aware, that instances of the entire success of this plan, may be quoted against us: thus, that Mrs. A, B, C, &c., accustomed their children to such exposure; and it will be triumphantly asked, "where can you find finer, or more healthy children?" But we would ask, in our turn, do they at the same time furnish us with an equally faithful list of those, who have died from the experiment? If they could, the argument would not be urged a second time.

457. The occasional success of a hazardous experiment, is very often productive of the most serious evils; it is followed as an example, when it should have been regarded but as an exception; nor is the error corrected, but at the expense oftentimes of many lives. Thus, for the supposed cure of an obstinate disease by an ignorant quack, the patient, grateful for his recovery, attributes to the skill of his attendant, and the virtue of his remedies, what justly belongs to the strength of his own constitution, or the favourable efforts of nature; and if they fail a hundred times in other instances, the disappointments are concealed; for each is ashamed to declare, he had reposed confi-

dence in the remedies—therefore the supposed success is alone heard of.

SECT. II.—*Of Fashion.*

458. Fashion has also exerted a baleful influence over the best feelings of the mother, for she has become willing to sacrifice the health and well-being of her offspring to its shrine.

The preposterous, and unsightly exposure of the arms of children cannot be too loudly reprehended, since it has neither convenience, nor beauty to recommend it: yet it is attended by the most serious, and manifest injury to the child. This practice may be perpetuated, from an ignorance of its dangerous tendency, and from a desire to give to the body an increase of power, to resist cold. We have in several places condemned the system of hardening; rather from the manner in which it is attempted, than from its want of utility, if properly conducted. In order, however, to render any plan effective, a knowledge of certain anatomical, and physiological facts is essential; and we shall accordingly expose them as opportunity may present itself, in the best manner we can. But upon no occasion, perhaps, shall we so satisfactorily have it in our power to show the injurious effects of cold upon the chest and lungs, as in the custom we are now attempting to destroy. The cautions suggested by the exposition we shall give, will be the more valuable, as they will strike the common sense of every body; and they will be the better appreciated, as the facts are the result of anatomical investigation, and not deductions of preconceived theory.

459. Portal, in a memoir inserted in “*La Médecine Eclairée*,” p. 335, shows, with much clearness, the connexion between the lungs and the superior extremities, by means of a great quantity of spongy cellular membrane, which proceeds from the upper parts of these organs; which, after passing under the clavicles,* and accompanying the axillary vessels and nerves,† penetrates the glands of the arm-pits. The spaces between the scapula‡ and the upper ribs, are occupied by this tissue; so, also, is the space between the great pectoral and dorsal muscles,§ under

* Collar bones.

† Shoulder blades, and neck.

† Vessels and nerves of the arm-pits.

§ Muscles of the breast.

which it passes; and extends itself to other muscles of the back, and those of the breast. The free and prompt communication between the lungs and upper extremities, is proved, M. Portal informs us, by injections. And nature may in part be imitated by the anatomist; for if he inject water into the cellular tissue of the lungs, it will be found to pass from air cell to air cell, until it arrive at the external part of the breast, and under the arm-pit; from whence it spreads itself to the arms and lateral parts of the chest, by means of the tissue just spoken of. M. Portal declares, he has reversed this experiment, by making water, or air, pass from the arms, or arm-pits, to the air cells of the lungs. From these facts the deductions are clear—namely, that whatever does injury to the upper parts of the arms, or arm-pits, will be felt by the lungs, &c.; hence the injury which must necessarily arise from the exposure of these parts to cold, &c.; and hence, in a practical point of view, the importance of remedial means to these parts, in cases of disease of the lungs; and hence, in children born of consumptive parents, the necessity and importance of having them sufficiently protected from cold by suitable covering.

SECT. III.—Of *Exposure and "Hardening."*

460. In our variable climate, we oftentimes have every variety of the year, in any one given portion of it; thus, in the middle of our winter, we have sometimes the mutability of April, or the mildness of May. If the latter be the case, or the temperature even lower, it would be folly to deny the enjoyment, and advantages of fresh air, (the body being properly guarded,) because our almanac declares the month to be January. The rule, then, for taking children into the open air, either in *summer* or in *winter*, must be founded in some measure upon our sensations, and the thermometer; for in summer, this instrument may indicate too high a temperature; and, in winter, one too low, for the purposes of exercise or of exposure.

461. But why should it be thought impossible to have fresh air in winter, unless the child be exposed to the inclemency of an out-door atmosphere? At that season of the year, is not the air, in a well-constructed house, of equal purity with that abroad? Cannot the temperature of a room be so regulated as to do away

all risk in the enjoyment of the air? And is that air not sufficiently pure and elastic for all the purposes of health? If these questions be answered in the affirmative, and we are sure every rational person will answer them so, we are in possession of a safe, and certain means to give the child fresh air, without the serious risk of exposure.

462. Let us, however, admit to the sticklers for exposure, there might be an advantage in "giving the child fresh air in cold weather," agreeably to their opinions of fresh air, will it not be conceded, on the other hand, that it will require much care? Will it not require that the child's body, or other parts, should not be exposed, but carefully, and sufficiently protected? Will it not also be admitted, that if attention be not paid to these circumstances, much risk, if not positive danger, will be incurred? If these points be yielded, we will ask, if one mother in a hundred be so fortunate as to have a person to take the child "abroad," in which this essential confidence should be placed? We are sure that many, perhaps, very many, will say, Yes! because they believe so: yet any one of observation who traverses our city, may contradict them; for they may constantly witness the limbs of the little sufferers exposed until purple with cold, while the nurse is attentive alone to her own pleasures or amusements, by holding a long gossiping colloquy with a *dear friend*, whom she has not seen for the "*age of a week*," or in examining in detail all the attractions of a print-shop, or feasting her imagination with the delightful articles of a pastry-cook's window. After this, the child is brought home, benumbed with cold; the mother receives it with rapture, and because her darling has been breathing an air but little above Zero for several long hours, anticipates future health for her child; at the moment, perhaps, it has received its death-wound.

463. It may, perhaps, be urged in opposition to these opinions, that the children of poor people are constantly "exposed," and have, in consequence, the best possible health. But upon this point, let the whole truth be told: we admit that "the children of poor people are exposed;" and also agree, that the number which remain of a family may even have "the best possible health;" but we would ask at what expense has this "best possible health" been procured? Look at our bills of mortality, and see how large a proportion of the deaths, is made up of young chil-

dren; and then examine the returns at the Health Office, and you will find how many of these "exposed" little sufferers have died by the experiment, or, rather, perhaps, from the unavoidable "exposure."

464. Many children, and especially those in large manufacturing towns; those of poor people, in crowded situations; and those who have but a scanty supply of provisions, are born with a strong predisposition to diseases. In severe weather, they are exposed to the debilitating effects of cold, besides the evils just mentioned, by which the latent dispositions are converted into active diseases; and these victims swell very much the bills of mortality.

465. Cold, when combined with poverty, exerts an almost irresistible influence upon the human constitution; they destroy, and spare not the helpless infant exposed to their violence; they desolate without stint or measure; and have more victims than any one disease in the whole catalogue of human maladies.

466. Adam Smith confirms this, when he says, "It is not uncommon, I have frequently been informed, in the Highlands of Scotland, for a mother who has borne twenty children, not to have two alive. Several officers of great experience have told me, that so far from recruiting their regiment, they have never been able to supply it with drums and fifes, from all the soldiers' children that were born in it."*

467. In thus attempting to point out the impropriety and danger of ill regulated, or indiscriminate "exposure," let us not be supposed to favour the opposite extreme—than which, nothing can be farther from our views. We as earnestly deprecate an over-weening caution, as we condemn unnecessary exposure; the mean, is the golden rule; and the degree of temperature, regulated by the force of constitution. It would be no less preposterous than injurious, to subject every child to an equal degree of exposure. The strength of constitution varies in almost every individual—cold air, is, unquestionably, a cold bath with certain modifications; now, no one would declare that the cold bath, and, especially, one of the same temperature, would be proper to every constitution, or at all times to the same constitution.

468. We agree, that children may be brought up too tenderly;

* *Wealth of Nations*, vol. I. p. 105.

and we declare this mode to be as wrong as the other—because, like it, it has its victims. Extremes, therefore, are never right. Upon a subject like the present, it would be impossible to lay down precise rules for every variety of case—we, therefore, can only give general directions upon this subject; the deviations which particular instances may require, must be left very much to the good sense and discretion of the parent. We must remark, however, 1st, that the lungs of young children cannot bear as low a temperature, with safety, as children of more advanced age; nor those of even a more advanced age, so low a temperature as an adult; 2dly, that the injury which young children receive when exposed to a very low temperature, is through the medium of the lungs, and is not of a direct kind: for it generally requires the sudden application of warmth to call into action the injurious effects of the previous cold—therefore, this important caution suggests itself in the management of children, who have been unavoidably or unnecessarily exposed to a low temperature—viz. not to bring them too suddenly into an atmosphere of high temperature; 3dly, as it is the lungs which especially suffer from a low temperature, no precaution of covering the body can protect them with certainty against the consequences of such exposure; yet, if the body be well protected, it will very much diminish the chance of injury to the lungs, by tending to maintain, and equalize excitement; 4thly, but if both lungs and body be exposed, the system has then to contend against the depression consequent upon the exposure of a large surface of skin, as well as that of the lungs, therefore, the risk of injury is increased, from this circumstance.

469. We once urged the above and similar objections against indiscriminate “exposure,” to a lady who was a great stickler for it, when we were told with an air of triumph, that the plan she had adopted in sending out her children, would at once be an answer to all our objections to the practice. The plan, which shall be told in her own words, was as follows:—“When the weather is cold, and that is the time you principally object to a child being carried out, I take care not only to clothe the child very well, but, also, before the nurse sets out, to cover its little head completely with a good warm cloak, so that the cold air cannot get to its mouth; and it will sleep when it is thus covered up, as soundly as if it were in its cradle in the nursery. So you

see that no possible injury can happen to the child, since it is not made to breathe the cold air, which you appear so much to dread."

470. We admitted this completely prevented the child from breathing the cold air; but it unfortunately created an objection nearly, if not altogether as strong, as the one it was intended to remove—viz. that it obliged the child to breathe a heated and impure air, generated by its own lungs; consequently, the pretext for sending the child abroad, was entirely done away. We asked this lady, how she would like the plan of placing a child, on a very cold day, in the yard, after carefully wrapping it up in its "crib," that it might enjoy a nap in the open air? This she declared would be highly dangerous, and she could never think of running such a risk. We then asked her in what this plan differed from her own? She became much puzzled for an answer, and could only defend it, by saying, that according to her method, the child had the advantage of exercise, which the other had not. We then appealed to her candour, and asked if the child were more passive in the crib, than while sleeping in the nurse's arms?

471. At another time, we were speaking with a lady who had lost three or four children with "croup," who informed us, she was convinced from absolute experiment, there was nothing like exposure to all kinds of weather, to protect and harden the system. By her first plan of managing her children, which was by keeping them very warmly clad, she lost several by the "croup;" but since she had adopted the opposite scheme, her children had been perfectly healthy, and never had betrayed the slightest disposition to the terrible disease which had robbed her of her other children.

472. "Perhaps, madam," we observed, "you did not, in making your first experiments, attend to a number of details, which might be thought essential to the plan—you probably did not take the proper precautions when you sent them into the cold air, or observed what was important when they returned from it." "Oh! yes, I took every possible care when they were going out, I always made them wear a very warm great coat, well lined with baize, and a fur cape, or collar; I always made them wear a 'comfortable,' made of soft woollen yarn, round their necks; and their feet were always protected by socks or

over-shoes, lined with fur or wool, as the weather might be wet or dry."

473. "Do you believe, madam, they were kept at a proper degree of warmth by these means?" "Oh! certainly: indeed, rather too warm; for they would often be in a state of perspiration, they told me, when in the open air, especially when they ran, slid, or skated." "And what was done when they were thus heated?" "Oh! they got cool enough before they would get home." "And would they receive no injury in passing from this state of perspiration to that of chill?" "Not at all; for when this happened, I always made them take a little warm brandy, or wine and water, and made them 'toast' their feet well by the fire."* "Did they sleep in a cold or warm room?" "In a warm room: a good fire was always made in the stove before they went to bed, which kept them quite warm all night." "Would they never complain of being cold towards morning, when the stove had become cold?" "Yes, certainly; but then there were always additional bed clothes at hand, with which they could cover themselves." "And did they always do so?" "Oh! I suppose so."

474. "Well, madam, how did you carry your second plan into execution, which you say was attended with such happy results?" "I began by not letting them put on their great coats, but when the weather was so cold as to require this additional covering, and did not permit them to wear a 'comfortable' or fur, round their necks. I took away their over-shoes; and if their feet chanced to get wet, (for they were always provided with good sound shoes,) the shoes were immediately changed, if they were at home. If the weather was wet, or unusually cold, they were permitted to wear their great coats; but not without. If they came home very cold, they were not allowed to approach the fire too soon. I gave them no warm, heating drinks, and accustomed them to sleep in rooms without fire."

475. Who does not recognise in this second plan for the enjoyment of "air and exercise," as judicious a plan of "physical education," so far as it goes, as can be well pointed out?—one we have been endeavouring to recommend, instead of the one it

* This absurd custom is a fruitful source of that distressing condition of the superior and inferior extremities, in winter, called "chilblains."

purported to be, "the happy results of indiscriminate exposure, in all kinds of weather, to harden the system;" and in the first, a preposterous routine of mischievous observances; observances entirely calculated to defeat the object for which they were so anxiously instituted. We were so successful as to convince this lady, in a very short time, that our "moderate plan" of exposing the body, was precisely the one she had pursued with so much success.

674. We also inquired of this lady, what plan she pursued with her children, when too young to be subjected to the rules just mentioned? She informed us, it was the same system throughout, only the details varied, accordingly as the circumstances of age, &c., made it necessary—that is, she sent her children into the open air at very early periods of their lives, provided in summer it was neither too wet, nor too warm; in winter, when the air was mild, dry, and clear; but always carefully wrapped up, that their little extremities might not suffer from cold. That she never suffered them to sleep in the open air, if it could be avoided; to prevent which, as much as possible, she constantly charged the nurse to bring the children home, as soon as she found them disposed to sleep, unless it was when the children were very young, at which time it was impossible to guard against it.

477. And, when her children were sufficiently old to walk, she took care to provide them properly for it, whether it might be in warm, cold, or moderate weather. That she never sent them abroad for pleasure, at the risk of encountering a storm of any kind; nor permitted them to walk, at the hazard of getting wet, or very muddy feet. "Were the constitutions of your children pretty much the same?" we demanded of this lady. "No: one of my boys was extremely feeble, from his very birth." "Did you treat him after the same manner precisely as you did the others?" "Yes, as far as regarded principles—that is, I permitted him to bear as much of cold, heat, or wet, as his constitution would support without pain, or injury; but the degrees were very different from those his brothers bore, had they been determined by the measurement of the thermometer, but precisely the same in effect, as far as could be ascertained by consequences—thus, if he were exposed to the same temperature as his brothers, he experienced no more inconveniences from it

when it was very low, than they, because he had additional covering to protect him, &c."

478. Let us not, however, be considered as advocates for a warm and enervating plan of education, because we condemn its opposite; for we believe nothing contributes with more certainty to impair stamina, than too great a delicacy of treatment, especially in the early part of childhood: and much as we deprecate ill-judged exposure, we are inclined to believe it is scarcely more injurious, than over-stimulating the tender systems of infants, by means of injudiciously applied heat. Heat, beyond a certain degree, or when too long continued even in an inferior degree, acts like any other stimulus upon the vibratile system of very young children. It over-stimulates the nervous, goads to excessive action the circulatory, and relaxes the muscular systems. In consequence of this, the different parts of the body do not develop themselves in their most healthy order, or in their natural proportions—the whole body is urged to a precocious expansion.

479. The cuticular system also suffers from this ill-managed application of heat; on the external surface, the sensible perspiration is greatly increased, and too long maintained; by which means the sensibility of the skin becomes too much exalted, and cannot bear without immediate inconvenience, a lower temperature than that, to which it has been for a long time accustomed; hence, as soon as this part is exposed, there is an immediate check given to perspiration, by the capillaries terminating on the surface contracting themselves—disease is, of course, the consequence.

480. It is not the external membranous system alone that suffers—the whole internal arrangement of it is more or less affected; for they either act inordinately, and produce affections of the bowels, or lungs; or they become torpid; and in this way, invite disease, by the destruction, or too great a diminution, of certain important secretions.

481. Children over-tenderly brought up, either by heaping upon them too much clothing, or prohibiting a sufficient exercise in the open air, become liable to catarrhal affections, the instant "the winds of heaven a little too rudely visit them;" and this misfortune is instantly quoted, against a proposal for a more invigorating plan of treatment. Thus, the effects of an improper

system of education, are mistaken for a natural weakness of constitution; in consequence of which, the error is perpetuated, and the poor child becomes an early victim to a ferocious disease, or is made to drag out a protracted existence, in which there is neither comfort nor enjoyment.

482. Such a plan of education is sure to entail imbecility of mind, as well as debility of body upon its followers; for every part is put not only too extensively, but too early upon the stretch; in consequence of which no organ is duly prepared for its offices; and of course must perform its functions imperfectly. This hot-house plan of rearing children, has ever had more victims than triumphs. It should, therefore, never be adopted, as it is contrary to the dictates of reason, as well as to the results of experience—and truly, like the hot-house plant, properly so called, is forced beyond its powers, and prematurely dies.

483. One of the most remarkable instances of precocious maturity, is that related of Louis II. king of Hungary. He was born so much before his time as to have no skin.* At two years old, he was crowned; in his tenth he succeeded; in his fourteenth, he had a complete beard; he married in his fifteenth; he had gray hairs in his eighteenth, and in his twentieth, died.

484. But, though we unhesitatingly condemn the plan of education just spoken of, yet are we at a loss to understand, why it should be considered so desirable to inure the body to extreme cold, in a climate like ours; since the attempt must in part be defeated, by every returning summer; and more especially, as the experiment is often of great price, from the manner in which it is too often conducted, by those who call themselves the exact followers of nature. In climates where cold is in the extreme, nature attempts to guard against its evils, by established laws, and not by occasional or desultory experiment. In the very high latitudes, the inhabitants are enabled to support the low temperature to which they are exposed, by a physical conformation peculiar to such climates—thus, they are almost invariably short of stature, fat, and enormous eaters of the most stimulating food.

485. Their short stature enables the heart to drive the blood

* This only means, we presume, that this covering to the body was excessively delicate, as we always witness when the fetus has not reached the seventh month.

with more force and certainty to the extremities; and these are the parts most likely to suffer; for it is almost invariably found, even in our comparatively warm climate, that tall people suffer more than short from cold. And, hence, it is that the face collectively is enabled to support cold better than the hands, or feet, as it is nearer the source of circulation; and not because it is more accustomed to cold from exposure; for certain parts of it, (if we may so unite them,) as the ears, and the extremity of the nose, in which the circulation is more languid, suffer equally with the more remote parts of the body. The fat of people of high latitudes also tends to the same advantage; it is a bad conductor of heat, and thus serves to prevent its escape when generated within the system; while their rapid digestion of the most stimulating substances, favours the extrication of caloric.

486. Both reason and experience, then, seem to caution us against adopting with too much rigour, a system which is by far too general in its principles, for useful or healthful application; but they at the same time direct us to conform to one, which shall permit departures, whenever such departures shall be warranted by a change of circumstance, or rational expediency. And, hence, we may conclude, that there can be nothing more dangerous, than the random application of principles, that are in themselves doubtful.

CHAPTER III.

OF FOOD.

487. The necessity of food commences after the first few hours of a child's birth; hence, the early provision that is made by the mother's breasts. Of this we have already spoken at some length, and laid down some important general rules, which we do not think necessary to repeat here. When we were upon this subject, we considered the mother as the only proper provider for the child; and we decided that it was her duty, and hers alone, to provide it nourishment from her own bosom; and

the more effectually to ensure this under the best circumstances, we recommended the early application of the child to the breast, and gave our reasons for these directions. In addition, however, to what we then said, we shall give some other important reasons for such advice.

488. In the last paragraph, we have in a very positive manner declared it to be the duty of the mother, and of the mother alone, to provide sustenance for the child, and that from her own bosom—this is our decided and unalterable opinion, as a general rule; a rule, that should not be heedlessly, or unnecessarily broken; one that should not be infringed, but from an imperious necessity. No plea of inconvenience or trouble; nor the subterfuge of imagined ill health, either immediate or remote, should be held valid. The incapacity, or incompatibility should be positive, ere the exception to the rule should be admitted; nevertheless, disqualifications may, and really do exist sometimes, as we shall now attempt to show.

SECT. I.—*Causes which may render it improper for the Mother to nurse.*

489. The 1st is, where there is no provision made for nourishing of the child; or where this is not in sufficient quantity, either owing to a natural, or accidental derangement of the breasts, or the imperfect performance of their duty.

490. 2dly, Where the supply may be sufficiently abundant in the commencement, but where it habitually fails in a short period after, owing to some constitutional or accidental defect, which, perhaps, is neither evident, nor remediable.

491. 3dly, Where, upon former occasions, it was unquestionably found to disagree with the child.*

492. 4thly, Where there is a strong venereal or scrofulous taint in the constitution of the mother.

493. 5thly, Where suckling produces an active or painful disease in the mother, as cough, colic, &c., and also, as

* We must not, however, take this rule without exception—we have seen two instances, within the last few years, where the mothers upon former occasions were obliged at an early period to abandon suckling, owing to the bad qualities of their milk; but upon the occasions now spoken of, it was not only very abundant, but of most excellent quality. The children, in both these instances, were of uncommon health and vigour.

494. 6thly, Dr. Struve says, "Those mothers who are so unfortunately situated that they cannot avoid provocation, grief, or sorrow; as well as others, who possess an irascible, and bilious temperament, or are subject to great nervous debility, accompanied by great susceptibility of every stimulus, will confer no benefits on their children by presenting them with a corrupted milk, which cannot fail to injure their health, and lay the foundation for consumptive and fatal maladies."* It must not, however, be imagined, that we intend to convey the idea by this quotation, that the milk itself contains the rudiments, or seeds of the diseases just mentioned, but merely, that constitutions labouring under such infirmities, cannot furnish healthy milk; or that of a sufficiently nutritive quality; and in consequence of the child being imperfectly nourished, its constitution yields to its predispositions, and active disease is produced.

495. Parents labouring under certain chronic affections, may transmit to their offspring predispositions to such diseases; and the body so predisposed, if it be not properly nourished in its very early infancy, whereby it may become strong and well developed, the constitutional tendency may be called into action, and the child die early, or have a protracted disease as its consequence. These cases are daily presenting themselves to the physician, for his contemplation; and they have long and anxiously engaged his most serious consideration; the result of which, so far as experience has yet determined, is, that nothing gives so effectual a check to this tendency, as bringing up the child upon a healthy breast of milk.

496. Therefore, when either of these conditions of the parent obtain, either in the shape of infirmity of temper, or of actual disease, it is certainly proper to provide the child with some other means of support, but the precise mode must be determined by circumstances; the best for such cases as the fourth, (492) and the sixth, (494) is a healthy wet nurse, especially in the country.

* Treatise on Physical Education, p. 215.

CHAPTER IV.

OF THE MECONIUM, AND ITS MANAGEMENT.

497. During pregnancy, there is an accumulation of a dark green substance in the bowels of the child, which is called "meconium," from its supposed resemblance to the syrup of poppies. This substance contains some bile;* it is in various quantities; it is of different tones of colour, and degrees of tenacity; and when permitted to remain undisturbed in the bowels of the child, is productive oftentimes of much mischief, especially in hot climates. This being the fact, it now seems to be admitted by all who are conversant with this subject, that it should be purged off, as early as circumstances will permit. It is only wonderful that there should have been two opinions upon this subject; since nature, if properly followed, performs this office by her own means, without the interposition of art—she effects this important end, by means of a substance found in the mother's breasts, upon the first application of the child to them, called *colostrum*.

498. But to derive advantage from this natural purgative, the child, as we have before remarked, must be applied early to the breasts; if this be neglected until the secretion of milk, properly so called, take place, it becomes too much diluted to serve this important end, and we are then under the necessity of having recourse to artificial purgatives, which never remove this substance so kindly as the *colostrum*.† Hence, in consequence of

* The meconium is evidently excrementitious, as it only occupies the colon and rectum; that it generally contains bile is every way certain; but not necessarily; as in some instances, bile has not been found in the duodenum of still-born children, that had arrived at full time, though meconium was present.

† It may be remarked, that those children who have been kept from the breast for several of the first days after birth, because, as the ignorant nurse declares, "there is nothing for them to draw," are uniformly more difficult to "cleanse," than those who have received into their stomachs the "*colostrum*" just spoken of. This substance, however, may be aided by the exhibition of a little molasses and water.

this neglect, the child is often tortured by colic or spasm, from the harsh remedy which may have been employed for this purpose.

499. Purging off the meconium, is a matter of more importance than is generally supposed; as well as the manner of doing it. The propriety of this measure is so universally acknowledged in this country, that it has become a practice of routine in the management of new-born children; and in becoming so, it is made a matter of too much indifference by what agent this is produced—hence, the improper employment of stimulating, and drastic purgatives upon such occasions; to the decided inconvenience, if not to the manifest injury of the child. This disregard of the *means* by which the meconium is carried off, has arisen sometimes from an over-importance being attached to the consequences, should it be suffered to remain, or be found difficult to remove.

500. Should this substance have been but imperfectly discharged from the bowels, all the evils which may chance to assail the child, are attributed to this neglect—nurses, accordingly, dreading such an accident, take care that no such blame shall attach to them; they, therefore, become indifferent to the *means* for its removal, provided the end be answered. In consequence, harsh and ill-judged remedies are employed; and sometimes to the almost immediate destruction of the child. We are persuaded, from our own observations, that many instances of the severe and sometimes fatal bowel complaints, of very young children, have arisen from no other source; and it, therefore, becomes an important part of our duty, to inveigh against this dangerous practice.

501. The evil we are now speaking of, has principally arisen from two sources—1st, as has already been remarked, from an undue importance being attached to the retention of the meconium; and, 2dly, from too unlimited a confidence being placed in the judgment of the nurse. As regards the first, we hold it highly proper, nay, perhaps, essential, that the meconium be carried off; because nature herself declares its propriety; but it by no means follows, that this must be effected, *coute qui coute*,—the *means* should be properly adapted to the *end*; and of these we have a sufficient choice. For the purpose just suggested, a solution of molasses, or of manna, in a little warm water; a tea-

spoonful of sweet oil; the same quantity of the simple syrup of rhubarb; or, in more obstinate cases, a tea-spoonful of warm castor oil, is almost always sufficient.

502. It is true, that we occasionally meet with instances of such tardiness of bowel, or so large a quantity of meconium, that a repetition of the above named remedies may be necessary; but they should never be persevered in after the object for which they were given has been answered; and this is ascertained with almost absolute certainty, by making ourselves acquainted with the appearance of the evacuations—if they are no longer tenacious, and of a dark green colour, the bowels have been sufficiently purged, or, in other words, if the evacuations have become yellow.

503. 2dly, Much mischief has been done by reposing too much confidence in the judgment of the nurse. This always convenient, and oftentimes highly valuable appendage to the lying-in room, is too frequently self-willed, and will too often run counter to the advice of the physician. This arises from her attaching too much consequence to her own experience, or by having “the pride of office,” in her opinion, too much humbled, by an appeal from her decisions. To prevent her self-love being wounded by interference in her management, she very often conceals from the physician in attendance, any casualty that may befall the child: and thus important time is sometimes lost, for the complaint may be serious, when the physician is first made acquainted with it; whereas, had it been attended to with sufficient promptitude, it might have been of little moment: here, by her want of knowledge of what was proper to be done, and the application of improper remedies, the disease has been permitted to acquire a force, that may bid defiance to future attempted control.

504. We trust we have a just and due respect for this class of people; and we are sure we are incapable of bringing any false charges against them; but a long experience has settled in our minds their exact value. The estimate we have made of their worth, makes us declare that some are invaluable for their patient endurance of fatigue; for their occasionally successful exercise of judgment; and for an amiable display of social virtues; but others are the very reverse of what we have just declared.

505. During the attendance of the physician, the duty of a nurse, as regards the medical treatment of both mother and child, is reduced to great simplicity—for she should but obey, and that

implicitly, his directions. She should never violate his orders herself, nor knowingly suffer others to do so; but every thing which belongs to medical treatment, whether it be merely prophylactic; the absolute administration of medicine; or the observance of regimen, she should never interfere with; on the contrary, she should most scrupulously see them duly and rigorously enforced; for it is her bounden duty. During the period of convalescence, she should constantly make her directions and management conform to the general principles, inculcated by the medical attendant. When she does more or less than this, she does wrong, and ought to be made accountable for any mischief that may happen. But we have, perhaps, no right to expect any thing but the exercise of the blindest temerity, from those whose opportunities do not afford intellectual culture.

506. Unfortunately, the custom of society is, in this particular almost in direct opposition to what we esteem its best interests. The opinion of a nurse is oftentimes taken before that of an experienced practitioner! In this the world departs from all its other habits. If advice be wanted on a question of law, will it prefer the opinion of the constable to that of the experienced advocate? If a text of scripture is wished to be expounded, will it apply to the church clerk, rather than to the learned divine? Or, should even a coat, or hat, or a pair of shoes be wanted, will it prefer the efforts of the apprentice to those of the master.

507. If this practice had not a decided influence upon the immediate health, or the future welfare of the child, we should not think it worth mentioning; but when we have witnessed so many serious errors committed at this period of the child's life, we think it an imperious duty to try to correct them. In making these charges against this class of highly necessary people, we disclaim all intention to criminate—we urge but an error of judgment. But from the number of victims, as we most conscientiously believe, this confidence in nurses has had, it is full time a stop were put to their ravages: for, were we to declare honestly, in round numbers, the instances of death of very young children, which we believe we have witnessed ourselves, in consequence of the errors we are speaking of, we should be afraid our truth might be questioned, and that we should be suspected of indulging in hyperbole.

508. Nor will this statement excite much surprise, when the

facts connected with it shall be investigated by rational and dispassionate inquiry. Let it be remembered by what a tender tenure, a new-born babe holds its ill established life; let it be recollected, how many causes may suddenly act, to weaken that life, which is now so frail; let it be taken into view, that if these causes be not successfully removed, they, for the most part, will produce death; then let it be admitted, how much judgment and experience are required, to detect the particular cause; how much care and knowledge are essential to the suiting of the strength of the remedy to the force of the disease; and let it be acknowledged that if these do not unite in the person of the nurse, who now usurps the place of the physician, that much danger must be incurred, and we shall cease to wonder, that their efforts, to say the least, are not crowned by success.

509. It is our firm conviction, that the mortality among children is unnecessarily great; and that this excess originates, in very many instances, in the mal-administration of the means of life, rather than to the operation of natural or inevitable causes. Some are nursed to death, while many die because they are not nursed at all; some are fed to death, while others die from inanition; some are physicked to death, while others die from the want of a single dose of it—all of which go to prove how much experience, and judgment are required to administer with success, to the many wants and infirmities of children.

510. It must appear reasonable to every reflecting mind, that the great mortality among children must have for its cause a variety of circumstances, not absolutely essential; and that it is more than probable, that many of the contingencies to which the poorer class of children may be subjected, are of a nature to be improved, if not to be removed altogether. It justly merits the consideration of every friend to humanity, to ascertain the causes which may produce this uncommon mortality, with all the precision of which the subject may be susceptible.

511. To us short-sighted mortals, it would seem to be no part of God's providence, to create so many children that they may perish at so early a period of their existence. And we are firmly persuaded, that the following are the principal means, by which this immense mortality of children may be diminished:—1st, Let none but a mother, when she is able, have the immediate charge of her child; for she alone should supply it with food; it

is she alone who should administer its medicine. 2dly, Let every mother make herself well acquainted with the best opinions upon the physical management of children; but never let her aspire to their medical treatment, except from dire necessity. 3dly, *Let no mother trust another to count out doses of laudanum, while she herself retains the faculty to do so, unless the person thus chosen has as deep or nearly as deep an interest in the child as the mother herself.** 4thly, In case of indisposition, let the mother confide in no judgment for her child's disease, but that of her physician, if his advice can be commanded; and, above all, let not his prescription be interfered with, by the obtrusive advice of a nurse, or still more ignorant old woman. 5thly, Let a mother place no undue confidence in the prescriptions of a nurse, under the persuasion that her *experience* must be valuable, when the advice of an experienced physician can be obtained; for let it be recollected, that if experience is to be the

* We have italicized this direction, because of its importance, and because we wish it to be impressive; for we have every reason *to believe* that the trusting this important office to others, has been fatal in several interesting cases, which have fallen under our immediate observation, and, in several, we have *had proof*, while, in others, strong suspicions were entertained, that the deaths were owing to the improper exhibition of laudanum. This drug has now become so familiar, as to be ranked with the "domestic remedies;" its presence no longer excites dread, nor its exhibition, terror. But let it be remembered, that, however the horror of the rattlesnake may be diminished by familiarity, its sting is no less deadly.

We have every reason to believe, that thousands of children are sacrificed yearly, by over-doses of this medicine. Its use is so common, and its virtues so often witnessed, that caution sleeps—for even children are trusted with its exhibition. A fatal instance of this kind has happened within our knowledge, not long since. A fine little girl of nine years of age, complained to her mother of the tooth-ache—the mother told her to put some laudanum in it, and gave her a vial of the liquid for this purpose. The child took a quantity of it into her mouth, and held it there; but at the same time, swallowed enough to destroy her in a few hours after. And we once heard a mother who was about to leave home for some hours, desire her daughter, a girl of eleven years of age, to give the baby five drops of laudanum, should it be "cross" while she was gone! We remonstrated with her upon this extreme carelessness, but we were answered, "her daughter was used to it."

It is still fresh within our recollection, when our prescriptions for laudanum would frequently meet with opposition; and if the counting of it were trusted to the "nurse," she would, perhaps, diminish the dose—but now! she gives it not only with a free, but oftentimes with a daring hand. A laudanum bottle is now a *sine qua non* to the furniture of a nurse's pocket.

guide, the latter sees a hundred patients, to one of the former. If these simple rules be well observed, we are persuaded, they will tend to abridge the mortality among children.

512. Let us also call to our recollection a truth, which we believe none will dispute—that, in general, children are born healthy, and, with good stamina; and with the exception of purging off the meconium, they require no medicine. If this become necessary, it is no infringement of the rule—it is but the exception to it; therefore, the vile and hurtful practice of drugging young children, cannot be too much reprehended.

CHAPTER V.

OF THE PROPER NOURISHMENT FOR THE CHILD.

513. Nourishment, and this derived, if possible, from the mother, is all that a new-born child requires; and it does not happen once in a hundred times, that the mother is not in every respect competent to this end; especially if she have previously discharged the duties of one, by paying a proper attention to her health. It rarely happens that the child does not find more than is absolutely necessary to its sustenance; therefore, it were preposterous to furnish it with more.

514. The reasons which are assigned, for giving the child other nourishment than the mother's milk, may be divided into the relative and the absolute. The relative are—1st, the fear of weakening the mother; and, 2dly, convenience. The absolute is, *the mother not furnishing a sufficient quantity, or that of proper quality*. It is, therefore, said, first, that the child should be fed to spare the mother. How spare the mother? If she furnish more than the child can consume, or only as much, how is the mother spared, by satisfying the child's appetite by other means? The milk is secreted in the breasts, by taking so much material from the general mass of blood; and all the consequences

which can happen by that deduction, are already experienced in its formation. Therefore, the woman is no more weakened by the child's taking it from the breasts, than if it remained in them to be absorbed from them; or, in other words, the woman will not be strengthened by permitting it to remain undisturbed in them.

515. 2dly, Convenience. It is said, the child should be fed early, that it may become accustomed to it, in case the mother should be sick, or should *wish to go out*, or to leave it upon any occasion. But we say, "sufficient for the day is the evil thereof"—and that the child should never be subjected to a certain evil, to guard against a contingent one; for should the mother be ill, and suffer a diminution of milk, the child can then be taught to feed, as certainly, when feeding may be useful, as when it is not required. Therefore, there is nothing gained by the anticipation; but there may be something lost. And, considered as a convenience, when the mother may wish to leave her child, it is both a cruel, and unnecessary one—cruel, because it will tempt a gossiping mother, to neglect her dependent child; and unnecessary, because a child that is governed by a well regulated system of nursing, can never suffer by any *proper period* of absence of the mother.

516. It should, however, be observed, that the child should not be subjected to any laws of nursing, until it is six months old; for up to this period, it will be rarely necessary to establish a system, as it will seldom make unnecessary demands for nourishment, unless a bad one have been pursued from the commencement, by indulging, or rather attempting to quiet the child by the breast, or by the still more improper plan of giving it pap, because it cries. If this system be pursued, much inconvenience will result; for one of two things must happen: 1st, If the child do not cry from absolute pain, a bad habit will be generated; for the child will cry for the mere gratification of being nursed; this will not only create a great deal of trouble, but will be highly injurious to the stomach itself, by occasioning it to be overloaded, and thus producing vomiting, purging, or colic; or, 2dly, If the child cry from actual suffering, the food may not do any possible good, or it may much increase the evil, by its being given at an improper or unnecessary time. Therefore, before this kind of indulgence is established, let the mother believe the

child may cry from other causes than hunger, especially if the breast, or food have not appeased it—let her examine whether a deranged, or ill adjusted pin, may not create the pain; or that its bowels may not be tormented by flatulency: in the one case, it is evident that the feeding can do no good; and in the other, it may be mischievous.

517. We all know how easily the stomach may be made to demand more food than is absolutely required—1st, by the frequent repetition of aliment, or 2dly, by its variety; therefore, both of these causes must be avoided. The stomach, like every other part, can, and unfortunately does, acquire habits, highly injurious to itself—and that of demanding an unnecessary quantity of aliment, is not one of the least. It should, therefore, be constantly borne in mind, that it is not the quantity of food taken into the stomach, that is available to the proper purposes of the system; but the quantity which can be digested, and converted into nourishment, fit to be applied to such purposes.

518. After the child has attained the sixth month, some system should be observed in all its little supplies, whether of nursing, or receiving of food, of rest, of cleaning, or of exercise; and as life really consists but in the performance of a routine of habits, it is a matter of much moment, that only such should be established, as will most effectually serve the general and best purposes of the system—therefore, all unnecessary, as well as every improper one, should be avoided; consequently, the sooner we begin, and the more regularly we adopt such as are proper, the better.

519. On this account, as little variety in the food of the child should be permitted as possible; for when many substances are offered, the stomach will receive more than it can master; precisely like the adult at a plentiful table, each new article becoming a fresh provocative to appetite; and for this reason, also, a little latitude should be given to the periods of sleeping or feeding; for though we distinctly perceive an advantage in some established order for these, yet this order should not be rigidly established, to the moment; for when it is strictly observed, the child will require both the one and the other from habit, rather than from necessity. Therefore, this extreme regularity must be avoided, as much inconvenience may otherwise result, to both mother and child.

CHAPTER VI.

OF PARTIAL, ARTIFICIAL NURSING.

520. The absolute reason for feeding the child, namely, the mother not furnishing a sufficient, or a healthy supply, is the only one which should be considered as obligatory. Such cases, however, present a choice of means—1st, where the mother may continue to suckle her child, aided by artificial means; 2dly, where she is obliged to have recourse to artificial means entirely; 3dly, a wet nurse.

SECT. I.—*First means; or where the Mother may continue to nurse her Child.*

521. We have always considered it best, when there is such a reduction of the mother's milk, as but imperfectly to nourish the child, to aid this scanty supply with the preparation we have already noticed, (248) consisting of cow's milk, water and sugar. This may be administered to the child, in one of two ways—1st, by the spoon; and, 2dly, by the bottle. We should, however, never recommend the first, if the second can be enforced; and for the following reasons: 1st, it is always less cleanly, as the child's breast is almost always wetted in the attempt; 2dly, the child is always fed lying down, and, consequently, there is some risk of strangulation; 3dly, the temperature of the fluid about to be administered, may be so high as to do injury to the child's mouth and throat, by burning; 4thly, there is a constant temptation to *improve* the victuals, by the addition of flour, &c.; 5thly, by the food being previously made to pass through the mouth of the nurse, before the child receives it; 6thly, by this method, the child loses the advantage of the admixture of its saliva, with the food it is receiving. Therefore, we consider the second plan to be the best, when it can be adopted.

522. It may be asked, would we confine the child which is in part artificially nourished, to the diet just mentioned, until the period of weaning? We would say, No—we would permit the addition of barley water, of gum Arabic water, of rice wa-

ter, or a small portion of arrow root, after the fifth month,* in cool weather, should there be a predilection in their favour; but, up to this period, and in hot weather, we believe the simple diet above mentioned, to be the most proper; especially, as the stomach gets a habit, if we may so term it, of digesting articles with ease by becoming familiar with them; hence, the propriety, and importance, of confining the child to the mother's milk, whenever this is practicable.

523. Dr. Clarke very justly observes, that "nothing is more absurd than the notion, that in early life children require a variety of food; only one food is prepared by nature for them, and it is too presumptuous to assume that the Creator of the world, acted in error; and that the ignorance of man is capable to correct it, or make any improvement in his works."†

524. The articles of food administered to the child by the artificial plan, should be as little varied as possible, for the reason just stated, and also, because each article has its period for digestion; it will therefore follow, that some may be of such difficult solution, as to be productive of much mischief. Much care is also required to preserve the artificial articles in a perfect state, as we have already noticed; and the directions given at that time, should be strictly adhered to, that the stomach may receive nothing in an altered or partially decomposed state. Besides, is it not folly to change that substance, which agrees perfectly well with the child?

525. Indeed, nature has very emphatically declared, by the organization of the infant, that her laws respecting food cannot be transgressed without marked injury. The want of teeth, or the means to masticate, and the feebleness of the powers of digestion, in early infancy, strongly indicate the necessity of an especial regard being paid to the food of the child, to preserve it even in common health, and to prevent the development of several painful, and fatal diseases. Therefore, it has always been found decidedly injurious, if not immediately fatal, to anticipate the powers of the stomach, by offering food to it, which was beyond its capacity to digest—hence, the frequent development of

* We are always supposed, in our directions, to have reference to children in good health the medical treatment of them is a distinct consideration.

† Commentaries, p. 58.

consumption, scrofula, and rickets, at an early period of life in the children of the poor, because food suitable to the ages of children, could not be procured ; or, in others, from the disregard of a truth so obvious as, that a child of a few days, or even months old, cannot digest the food that may be proper for children, of a much more advanced period.

526. From the earliest period of medical history, the importance of this rule has been insisted on: for Hippocrates himself inculcated its necessity, and strongly insisted upon its importance, and devoted a considerable part of his works to the subject of diet; nor have his cautions, or instructions upon this point ever been disputed. Therefore, a deviation from the rule, namely, to accommodate the nature of the food to the age and powers of the child, should only be infringed from *necessity*.

527. Nature has ever been attentive to this subject, throughout animal existence; she has governed the general system almost exclusively by the powers of the stomach; and we may trace the influence of this law, from the simple hydatid to the most perfect animal. She has so arranged the powers of the stomach, that a departure from the general law which governs it, cannot be made without evident injury, and perhaps death itself. Thus the cow cannot be made to live upon animal food, nor the tiger upon vegetable, &c. The same general rule holds good with regard to man, in the early, and after part of his existence. It will be agreed upon by all, that the infant could not be made to thrive upon the gross food necessary to adult age; and that adult age would be but ill sustained by the food of early infancy, however abundant it might be in quantity. And the same principle holds good in the whole class of mammalia. For in this class, milk is always the first article prepared for the sustenance of the young of every species; and they are confined to it universally, until fitted by a new arrangement of organization, to profit by other food.

528. This law is more remarkable with man, perhaps, than with any other animal; for the state of probation, if we may so term it, is longer with him, than any other. The early parts of his life, are marked by most important and distinct periods; and each period has its appropriate state of mouth, and powers of stomach: thus, before the appearance of teeth, nothing can be proper but the milk of the mother; after the appearance of some

teeth, the addition of some farinaceous substance may be permitted; and after their completion, or even a little earlier, animal substances may be added.

529. It is often asked, at what age will it be proper to make a change in the diet of the child, by giving it a proportion of animal food? This question must be answered by referring to a principle, and not to a period of the child's life, marked by a lapse of any number of months. Nature has declared by the formation of the teeth, and by the organization of the stomach, that man is a promiscuous feeder; and that a due mixture of vegetable and animal matter, is essential to his best and most perfect well being. The question now narrows itself, by asking, by what sign shall it be known, when a change of food can advantageously be introduced into the human stomach? This is fully answered, we trust, above. If the cutting of teeth shall mark the proper period for changes, (as we believe it does,) it will at once be seen, it cannot be fixed by dates; since the cutting employs from the third to the eighteenth month, or sometimes even longer.* And it would seem to follow, from these premises, that animal food cannot be given with propriety, even in small portions, to a child, before the system has protruded the grinding teeth; therefore, we would say, as a general rule, it would be improper, before that event has taken place.

530. After a child has got its grinding teeth, its food may be a little more varied, as well as more substantial; yet it must consist principally of milk, in which grated cracker may be stirred; well baked stale bread; rice flour, or arrow root; and, occasionally, a little animal food in substance may be given, provided it be previously well divided; or, it may be used in the form of broth, or tea. After the eye and stomach teeth have come through, the child may be indulged daily, but only once a day, with solid animal food, which has been either boiled or roasted; as any other mode of cooking it is exceptionable.

531. An error is constantly committed, in the early exhibition of animal food—it is imagined, that all kinds are equally proper, and these either salted or fresh. And farther—if the child happen to be reduced by any cause, they suppose that the more fre-

* We have at this moment, (May, 1825,) a little patient, seventeen months old, who has not cut a tooth.

quently meat be given, the more the child will be benefited. But such people should be made to understand, that it is only that part which is digested that can be useful, and that this will depend exclusively upon the powers of the stomach, and, moreover, that these powers can be easily overstrained. And, in corroboration of what we have just stated, it is agreeable to all observation, that the healthiest children are those that eat the least animal food.

532. Though the occasional and moderate employment of animal food, may be sometimes necessary from peculiar circumstances after some teeth may have made their appearance, yet the quantity, and quality, are not matters of indifference. It should never be given in such quantity, in a solid form, as to make it a meal, as the stomach, most probably, will be unable to manage so great a bulk; and, certain it is, the exigencies of the system cannot require it. The most proper mode to exhibit it, is in a fluid form—such as beef, mutton, or chicken tea, without any mixture of vegetable juices. These teas should be given at such intervals, and in such quantities, as the deficiency of the mother's milk, or the situation of the child, may render necessary; or as a change of food may be judged important, from the number of teeth; or when the advancement of the age of the child may seem to require this additional stimulus, without such a failure on the part of the mother.

533. It is not a matter of indifference, what animal is made choice of for its flesh—some are decidedly better than others. Beef, mutton, fowl, are much to be preferred to veal, lamb, or pork. Oysters are very unexceptionable articles of diet, when made into a thin soup. In using, however, any of these articles, especially in warm weather, care should be taken to have them fresh; as any progress towards decomposition, would be highly improper, if not really dangerous. Therefore, but small quantities should be prepared at a time, and used as quickly as may be, after. The lean parts of either of the first named meats, should be used in making a tea, or, if it be difficult to separate the fat before boiling it, it is not so afterwards; for if the product be permitted to cool, the greasy portion can easily be separated. The red juice which flows upon the cutting of underdone beef, or mutton, can very advantageously be employed, by adding an

equal measure of water, and suffering it to boil—there should always be a little salt added; and a blade of mace is a pleasant and proper addition, especially in hot weather. Veal, or lamb, may be used, provided the beef, mutton, fowl, or oysters,* cannot be procured: they must, however, always be looked upon as inferior to the others. Pork is never admissible.

534. Regular periods, or nearly so, should be observed in exhibiting the animal juice, that they need not interfere with the digestion of the milk the child receives from the mother; therefore, it will always be best to give them at stated times, taking care to let it be received upon an empty, or nearly an empty stomach; especially, when this change is commencing—the reason for this is, to ensure to the newly introduced substance, the full powers of the stomach.

535. On this account, it is also right, that the mother observe after a certain time, some regulations as regards the periods for suckling—we have elsewhere fixed the period at about the sixth month. (516) Before this time, but little injury can be sustained by a frequent indulgence at the breast; but after this, it becomes highly important, both as regards the mother, and the child. On the part of the mother, it prevents an over stimulation, and consequent weakness of the glands of the breast; it permits a gradual accumulation of milk in the milk-vessels, and gives time to the nipples to recover their tone, and thus prevents their becoming sore. On the part of the child, it prevents over-distention of the stomach; it prevents fretfulness, or clamorous demands for the breast; and at night, especially, it permits it to sleep, and thereby gives ample opportunity for the digestion of the food it had previously received. On this account, it is a good rule, that the mother should suckle her child the last thing before she goes to bed.

* Mr. Friedlander condemns oysters, as being too heating. If this mean any thing, it must be, that they are too stimulating. Now, this is very far from being confirmed by our own observation, or, we believe, that of any other physician in this country. We have ever found them to be nutritious, and void of all stimulating qualities; so much so, that they are the first article we indulge our patients with, on their return to convalescence. He has ranked them, very unjustly, with muscles, lobsters, crabs, &c., which are known to disagree very often, especially in warm weather; whereas the oyster is very nutritious and bland, and rarely offends, like the others, by any peculiar quality.

536. It is a common practice with many mothers, to permit the child to go to sleep at the breast. This should always be avoided when possible; for the fear in which this practice originates, is purely chimerical—namely, that the child may suffer during the night for want of nourishment. The frequent taking of the breast, is entirely a habit; and one that is calculated to do mischief; as both the rest and digestion of the child are interrupted, to say nothing of the unnecessary fatigue to the mother.

537. Occasionally, we have known the stomach reject these animal solutions. In such case, where the change of diet is desirable, we have found the substance itself, when divested entirely of its fat, answer very well; it should, however, always be chopped up very fine, and given in very small quantities at a time. By this plan of feeding, several advantages arise: 1st, the child has the meat well divided by the knife, which could not always be done by the teeth; 2ndly, if given in very small quantities, the child permits them to tarry in its mouth, until they become saturated with saliva—a circumstance of very great consequence to the process of digestion; 3dly, it prevents the risk of temporary strangulation, as the bulk is not sufficiently great, when thus divided and given in small quantities, for this accident to take place; consequently, a disgust to the food is not excited.

538. At this period, also, that is, after a number of teeth are cut, the child may very profitably be indulged in the use of butter. Small pieces of good stale bread and butter may be given several times a day; the butter should, however, always be of the best quality; and unless this can be ensured, it is decidedly best it should not be given. Some young children will not take it when spread upon bread; it may then be given alone, in small quantities at a time.

539. Strong prejudices are entertained by some against the use of the last named article; so much so with a few, that it is entirely prohibited to young children, and sometimes even to older. The fear of butter originated in unfounded premises, and is perpetuated by absurd deductions. It is said, that in this climate, especially in warm weather, our diseases are almost all of a *bilious character*—*butter is bilious*; therefore, butter favours this dangerous tendency of the body. This absurd logic, ap-

pears to be the sum of evidence against the use of this delightful, and highly useful substance.

540. For many years past, our habits, as well as our duties, have led us to make observations upon the use of butter, as an article of diet, and especially for young children; and, from all that we can collect upon this subject, we are decidedly of opinion, that it is not only innocent, but highly useful. It is grateful to almost all children; yet we do not recollect an instance, where an indulgence in it, was followed by the slightest injury. And as a medicine, in certain affections of the bowels, it constitutes in some instances an invaluable remedy, as we shall have occasion to notice in its proper place.

541. Most people are in the habit of giving the potato to children of the age we are now noticing. The propriety of this, in our opinion, is very questionable; and we think its use should not only be very limited, but given with great caution. We have oftentimes witnessed very distressing results from the too free use of this vegetable; and especially when it has been given, as it too frequently is, mixed with the gravy of meat. We have seen many instances of indigestion, cholera, colic, and sometimes even convulsions, succeed a too free indulgence in this article. If the potato be used, it should be always well mashed, with a little hot milk, a small piece of fresh butter, and a little salt. This is the most unexceptionable mode of using it; and even this should be given in small quantities at a time, and only to children beyond the ninth month.*

542. To some stomachs, the potato is uniformly exceptionable; nor does a perseverance in its use, as has been often at-

* It must, however, be confessed, that the introduction of this highly valuable root, has been attended with much good, even to young children, in countries where the means of life are scarce, and, of course, difficult to procure among the poorer classes of people. To these it has afforded a large supply of food, at a very moderate expense, besides, its quality being absolutely better, than much of that which they were obliged to employ before its introduction—therefore, comparatively, it is much better than many other roots before in common use. Thus, Professor Lentin, (Friedlander, *l'Education Physique de l'Homme*,) informs us, that the comparison of deaths in his parish, before, and since the introduction of the potato, is much in favour of this article. But all this only declares in favour of this root, where it is put in comparison with certain others; it does not prove it to be the best, or even equal to many other articles; for instance, as good wheat flour, rice, arrow root, sago, or tapioca.

tempted, serve to reconcile it. This root does not contain as much nourishment as is generally supposed; and what there is, is very difficult of extraction to even a slightly enfeebled stomach. Who has not seen it pass through the bowels, in the precise condition it entered the stomach? And who has not known this friendly warning disregarded, until serious injury has arisen from a perseverance in its use?

543. Many of the solid articles of diet, have been employed merely because they were solid; and this preference for solids has arisen from the vulgar belief, that they are necessarily more nutritious than fluids; than which, in many instances, nothing can be farther from the truth. Besides, it should be recollected, that before a solid can be converted into nourishment, it must be first reduced to the fluid state.

SECT. II.—*Second Means; or where the Mother is obliged to use artificial Means entirely.*

544. When the woman is obliged to give up suckling her child altogether, and prefers the second (520) to the third mode of nourishing it, she is under the necessity of conveying food to it, as we have already observed, (521) in one of two ways—viz. by the spoon, or by the bottle; and we at that time gave our reasons for preferring the latter. We will now, however, say something farther on the subject of nourishing the child by the bottle.

545. We consider the use of the sucking bottle, as a great improvement in the rearing of children. Unquestionably, it is one, that is attended with the most entire success in very many instances, though we at the same time admit it to be accompanied with considerable trouble, although it be administered in the best manner; and must always be regarded, but as a substitute for the breast. But where the choice lies between it, and a hireling nurse, we should without hesitation give it the preference, unless our choice could be very securely made in regard to the latter; or there are existing some particular circumstances, which render the bottle improper.

546. There are cases, however, in which we should very much prefer the breast; and this even at the hazard which must

always attach, in making choice of a person to fulfil the important duty of a nurse. These cases are, 1st, for a very young, and feeble child; and especially where this weakness arises from its immaturity; from a natural delicacy of constitution; or from the previous illness of the mother; 2dly, where the mother has a tainted constitution; and which taint has been, in other instances, or may again be perpetuated to the offspring; 3dly, where the mother's milk has decidedly so far disagreed with the child, as to produce either bowel complaints or great wasting; 4thly, where the child is recovering from illness, particularly from complaints of the stomach, and bowels; 5thly, and above all, where the experiment of the bottle has been fairly tried, and it has not been found to answer.

547. When the bottle is used, much care is required to preserve it sweet, and free from all impurities, or the remains of the former food, by which the present may be rendered impure, or sour; for this purpose, the following cautions must be observed:—*

548. 1st. Never put a second supply of milk, or food, upon the remains of a former, unless a very short interval, only, has elapsed, and they are of the same making.

549. 2d. As soon as the child has taken as much as disposed, or as may be judged proper for it, let the bottle be emptied, if any food remain, and immediately cleansed by *hot water*.

550. 3d. When well cleansed by the hot water, let it be thrown into, and kept in a basin of cold water, in which there is a little soda dissolved.

551. 4th. Before using it, let it be well rinsed with clean cold water.

552. 5th. Let the extremity, from which the child is to suck, be covered with a heifer's teat, in preference to any thing else; and, with a view to its preservation, the following rules must be observed:—

553. 1st. Let this teat be one, that has been preserved in the best possible manner, by those who understand this art.

* It is not the bottle alone which requires this strict attention to cleanliness; it is every utensil that is employed, either in the preparing, or receiving the nourishment of the child—for they may become either sour or impure, by some of the victuals adhering to them; or they may be chemically acted upon: as vessels made of copper, or glazed earthenware.

554. 2dly. Let not the teat be of too large a size; nor one, that will permit too rapid a flow of the food, especially for a very young child. If it be found to pass too freely, let the piece of sponge which is, or always should be, at its extremity, be either enlarged, or more strongly compressed.

555. 3dly. Immediately after the bottle has been used, remove the teat from its mouth; and let it and the sponge be well washed, and kept, in a little whiskey and water, until again wanted. When reapplied, let it be attached by a piece of clean thread, as the former piece will be sour.

556. From what we have said, it will appear, that we prefer the flat oblong bottle, with a teat to the bottle and tube—and we do this for the following reasons:—

557. 1st. The extremity of the tube is never so well received by the child, as the teat; nor is it so comfortable to its mouth.

558. 2d. The tube frequently becomes obstructed by the curd of the milk; and it is oftentimes difficult to remove it; and if not removed, its objects will be defeated.

559. 3d. It is much less convenient; requiring much more address in the management of it, than the bottle.

560. 4th. It is much more difficult to keep clean or sweet; consequently, must be improper in proportion to that difficulty.

5th, Besides, the flat bottle and teat need no re-heating of the food during the night, as it can be taken into the bed, and kept sufficiently warm by the heat of the body; whereas, the tube and bottle require that the food must be warmed by a fire, which is found to be extremely troublesome, or the child must receive its nourishment cold.

561. The food for the child in this artificial nursing, is the same as we have already recommended, (248,) when only partially nursed by the bottle; namely, the cow's milk, water, and sugar. It should be frequently renewed, for the reasons we have already given; and it should never be made too tenacious by the addition of other substances than those already recommended, as it will not pass through the pores of the teat, or through the tube with sufficient facility.

562. Children, brought up by artificial means in this country, have subsisted almost altogether upon cow's milk, reduced, as directed before. The European writers speak highly of the

milk of other animals; but of the qualities of these, we have had no opportunities to judge. Thus, the milk of the goat, the mare, the ass, &c., have been much praised for their nutritious, and other qualities, by different writers.

563. Dr. Clarke,* of London, declares, "the milk of the ass, to be the best substitute for that of the mother. Cow's milk is too rich, containing too much oil and cheesy matter." We will, however, give the results, which the analyses of the milk of several animals have afforded, agreeably to MM. Parmentier, Deyeux, and Vauquelin.

564. One hundred pounds of milk gave of

	Cream	Butter	Cheese	Sugar
The Cow	$4\frac{1}{10}$	$2\frac{11}{10}$	$8\frac{15}{10}$	$3\frac{5}{10}$
Woman	$8\frac{11}{10}$	3	$2\frac{11}{10}$	$7\frac{3}{10}$
Goat	$7\frac{15}{10}$	$4\frac{9}{10}$	$4\frac{5}{8}$	$4\frac{3}{5}$
Ass	$2\frac{15}{10}$		$3\frac{15}{10}$	$4\frac{2}{10}$
Sheep	$11\frac{9}{10}$	$5\frac{11}{10}$	$15\frac{3}{8}$	$4\frac{3}{10}$
Mare	$\frac{13}{10}$		$1\frac{5}{8}$	$9\frac{1}{10}$

565. From this statement it would appear, that the milk of the ass and the mare, approach nearer to that of the human, than any other yet analyzed. The milk of the mare is remarkable for its containing so little cream, and so large a proportion of sugar.

566. But the nearer we can approach the qualities of the breast milk, the better will be our compound; for nature has declared this to be the best possible pabulum for the child; and there cannot well be a greater error, than to suppose every addition an improvement. We will not say that the substance just recommended is not susceptible of improvement: we mean only to declare, the simple mixture just mentioned to be the best we know for the child, up to a certain period—say, until it has cut several teeth. After this time, we may, should it be deemed necessary, improve its nutritive qualities, by the addition of gum Arabic water; barley, or rice water. We think we have seen decided advantages result from these additions, particularly from the gum Arabic water. Or, small quantities of some animal juice may be given in conjunction with the other preparation.

* Commentaries, p. 56.

567. But let it be recollected, much mischief sometimes arises from a fastidious desire of improvement. The necessity for alteration should always be ascertained, before the change is made; for it would be more than idle, to insist upon a change of diet, while the child is rapidly, or even perceptibly improving; especially, as the quantity of its food can readily be increased, in the precise ratio to the necessity for such increase. Therefore, when it becomes desirable from any cause, (as in certain stages of bowel complaints, &c.) that the *quantity* of food should not be increased, we may with much advantage sometimes increase its nutritive *qualities*, by the addition of the above named substances.

568. It would be very desirable, could it be always regulated with sufficient certainty, to permit the child to take no more into its stomach at a time, than this organ can assimilate in due time; for it has always been found better, that the stomach crave food, than to be oppressed by an excess of it. The quantity given at a time must be regulated by the age of the child, and by the force of its digestive powers; and the periods for its exhibition, must in some measure be governed by the same laws.

569. As a general rule, such an interval should be allowed between each feeding, as will ensure the digestion of the previous quantity; and this may be fixed at about every three or four hours. The quantity to be given at each period may pretty successfully be determined, by the avidity with which the child receives it; for it will rarely demand more than it feels comfortable to receive—therefore, a little experience will enable any body to determine this point. When this matter is settled by repeated observation, it is proper that no more than has been generally found sufficient should be urged upon the child at that time, especially if it be taken rather reluctantly; but making at the same time due allowances for its advancing increase of size. There will also be constitutional differences, as to the quantity, which may be required; but this, to a woman of observation and care, will offer no embarrassment; but it should nevertheless be attended to, that an undue quantity need not be urged upon the child in one instance, nor an insufficient one, be given at another.

570. There is one rule, which should constantly be attended to, especially as it is certain in its indication, and useful in its observance; namely, when the child ceases to extract milk from

the bottle,* and it be restored to it, and it refuse to take it, let it not on any account, be urged to swallow more than nature seems to demand. We are aware that this will occasionally happen, from a previous bad regulation—namely, feeding the child just before it is offered the bottle. But, be this as it may, the rule just laid down must be strictly observed.

571. With children who are nourished by the breast, this business is left almost altogether with the feelings of the child; nor is this, in general, attended with any serious consequences. Should it take more than is really required, or than is agreeable to the stomach, it is soon regurgitated, and the uneasiness removed. But it is not exactly so, in the artificial mode of rearing children; for the stomach does not so readily yield its contents, when it shall have become oppressed by quantity, as it does when it obtains its supplies from the breast; and, on this very account, the artificial mode is less proper than the natural. It would seem, that the milk of the mother has some inherent quality, which provokes the action of the stomach to cast it off, as soon as it becomes offensive; but this is not so much the case with the artificial food, intended to supply its place. This, however, may arise from the one being drawn immediately from the breast, while the other has been exposed to the atmosphere, and suffered a change. The cow's milk contains more cheesy matter; and is on this account of more difficult assimilation—hence, it is frequently thrown up in the form of hard curd.

572. The stomach, therefore, will be more liable to these little inconveniences when confined to the bottle, than when it shall receive its natural supplies; but a little careful observation on the part of the nurse, will prevent any serious injury from this cause, as she will soon become familiar with the proper quantity to be administered; or, in other words, how much the stomach will bear, without suffering from repletion. The quality of the food can be pretty much subjected to rule, by having regular proportions of the respective ingredients; and habit will soon enable a careful and observing woman to determine the quantity.

573. We have already, upon several occasions, adverted to the

* This observation will hold good, and should be carefully observed, when the child is at the breast altogether.

care that is required in preparing, and preserving in a proper condition, the milk intended for the use of the child; we shall, therefore, only observe, in addition, that upon no occasion, when the child is in health, will the milk require boiling. Boiling takes from the milk some of its best qualities, as may readily be detected by the smell, when this fluid has been subjected to it. It should, therefore, never suffer this change, as it can never be necessary while the child is in health.

574. In hot weather, it is true, the tendency to decomposition is diminished by boiling the milk; but, as all the advantages which may result from this process, can be procured without its being absolutely boiled, it should never be had recourse to. It is every way sufficient for the purposes of preservation, that the milk be put, closely covered, over a hot fire, and brought quickly to the boiling point; as soon as this is perceived, it should be removed and cooled as speedily as possible.* By this plan, you prevent, in a great degree, the formation of that strong pellicle, which is always observed upon the top of boiled milk, and by which the milk is deprived of a portion of one of its most valuable parts.

575. The child should not receive its nourishment while lying—it should be raised, which will not only become a pleasanter position, but it also diminishes the risk of strangulation. After it has received a sufficient quantity of nourishment, which it should always do slowly, by stopping from time to time; it should be kept perfectly quiet, for at least half an hour after each repast; and if an attempt be made to use the common nursery promoter of digestion, namely, *jolting*, it should be immediately prohibited in the most decided and positive terms. This preposterous, and highly injurious practice, has become so familiar, as to be overlooked as a cause of mischief; yet it merits more severe reprehension, than might at first sight be imagined.

576. As the future welfare of the child must, necessarily, in part, depend upon the proper administration of its nourishment in the early part of its infancy, it must follow, if the due exhi-

* An excellent method to warm milk, is by a sand bath; which any body may command, by partly filling an iron pot with dry sand. If the milk be placed in a proper vessel in this bath, it may be heated by setting it over coals, or it may be placed upon a stove until it acquires a proper warmth.

bition of it as regards quality and quantity be neglected, all the evils which can attach to deranged stomach and bowels, must follow; and if, on the other hand, there be no complaint to be made as to these two points, but, on the contrary, they are regularly and judiciously ordered, but all their advantages destroyed by digestion being interrupted, it must follow, that the practice which shall do this, cannot be too severely condemned—therefore, the barbarous practice of jolting the child immediately after each meal, or, perhaps, after each portion of it, should be strictly forbidden.

577. For a certain period after each meal, rest is as essential to digestion, as exercise is important at other times to the general promotion of health—therefore, whatever interrupts or interferes with this repose, at once defeats the kindest intentions of nature, toward this passive and interesting part of creation. Analogous to jolting, is the absurd, and oftentimes dangerous practice of tossing the child high, in such quick succession, that respiration is oftentimes suspended. Some seem to know no other mode of nursing a young child, than that of rudely tossing it about; and we have oftentimes been gratified by the disturbed stomach, indignantly pouring out its contents, to the dreadful annoyance of the holiday clothes of the boisterous, and thoughtless *pro tempore* nurse, who forced it to this retaliation. Nothing can speak in plainer language than the insulted stomach, upon such occasions; as it at once declares the evils which must ensue, whenever its functions are thus cruelly interfered with.

578. We have often observed the bottle to become the plaything of the child. This has arisen, most probably, from the mother or nurse not having as much leisure as duties to the child might require—the bottle is then given to appease its immediate clamours, and afterwards suffered to remain with it, that they may not be renewed. This is decidedly very injudicious, if any thing more than quieting the child be considered of any consequence.

579. By this plan, the child receives a fresh supply of food every few minutes, without giving time for the previous quantity to be disposed of; the process of digestion is, therefore, never completed, or is constantly interrupted. In consequence of this, a great part of the food passes from the stomach into the bowels,

nearly in the condition it was received, or but imperfectly assimilated; and it is there subjected to a sufficiently long delay, to ferment, or to become sour; colic, or diarrhœa, or both, are the result. Besides, the child is deprived, by this plan, of a considerable portion of its nourishment; for not only that which has undergone a change, as well as that which has not, escapes from the stomach, and passes through the bowels, without contributing to the nourishment of the body. Hence, children who are always eating, are never fat.

580. There is also another evil arising from this mode of administering nourishment to the child—namely, the food becomes sour, or nearly so, before it is taken into the stomach, by its being kept constantly heated by the child's hands and body—the impropriety of this, will at once strike every body.

581. Rousseau has advanced some strange sentiments upon the subject of milk. He says, "The milk of those women who live chiefly on vegetables is more sweet and salutary than that of carnivorous females." More salutary to whom, or to what? Does not this imply an imperfection, and a contradiction, in the works of nature? The milk produced by a mixed diet would certainly be most proper for such animals as naturally live upon mixed food; but would this be as sweet and as salutary to the young of the animal which feeds upon animal substances alone? We believe not—for there is every reason to suppose the milk to be suited exactly to the powers of their digestive organs. If he mean, that the milk of animals strictly carnivorous would be less sweet and salutary to those who are destined to be supported by milk from a mixed diet, we would most readily agree with him; but this would be begging the question. Now, as there is not in civilized life, one woman in ten thousand, who lives upon animal food alone, it must follow, that children deriving nourishment from the breast, must receive milk of a mixed character; and that appears to be as much as we have a right to expect.

582. If there be any truth in the opinion of naturalists upon the nature of man as regards his food, it will be found, that he is intended to eat of both animal and vegetable substances; therefore, to confine him exclusively to either, would be as preposterous, as to urge animal substances upon the cow, or to force vegetables on the tiger.

583. Rousseau farther attempts to support his position, by declaring, that "every body knows, that pulse and vegetables increase the quantity of blood more than meat." Now, this is not known to every body, nor to any body, and consequently, his question, "Why, therefore, not milk?" which immediately follows, and intended as a deduction, answers itself.

584. He admits, that vegetable aliment may, possibly, make the milk more apt to turn sour; but he says, "I am very far from regarding sour milk as an unwholesome nutriment. There are people in some countries who have no other, and yet are in good health." This is novel to us—and we regret he has not left us some indication of the country where the cows give nothing but sour milk. He most probably means, there are people who prefer milk in this condition, to sweet—this may be; but we do not believe there is a nation subsisting upon sour milk alone, and in good health, as this passage would seem to imply.

585. This observation is not confirmed by any other writer; it is certainly contrary to our own experience, and we believe to that of every body else, who has not a theory to support. But Rousseau appears to be determined upon this point, since he enlists in his favour the circumstance, that milk must be coagulated* in the stomach, before it is converted into nourishment. But he was an indifferent physiologist, or he would have known, that the change produced upon the milk, by the proper action of the stomach, is very different from that curdling which is the effect of spontaneous decomposition: the one is necessary to its due elaboration; the other, if not positively injurious, taxes the powers of the stomach pretty highly to subdue it to proper chyme.†

586. It will also readily occur, to any one who will give this important matter a due consideration, that the bottle with mothers, or nurses who are too much limited for time to bestow the necessary attentions on the child, will not succeed so well as it does in the hands of those who have more leisure; for their restricted time prevents such attention to the state of the bottle, that is so essential to its success. If due care be not paid to its being

* But, the coagulation alluded to by Rousseau, and which takes place spontaneously in the stomach of healthy children, is not the coagulation produced by acidity; it is similar to that which takes place out of the body by "rennet."

† Chyme is the imperfectly digested mass, that is subjected to the influence of the bile and pancreatic juice in the duodenum, that it may be converted into chyle after it leaves the stomach.

properly, and very often cleansed, it must fail of being as useful to the child as it should be. Cleanliness must, therefore, in this as it is in many other instances, be considered as a *sine quâ non* to the success of the bottle plan, of raising children.

587. We mentioned, in our account of the manner of preparing the cow's milk for the use of the child, (248) that a small portion of *loaf* sugar should be added; but did not, at that time, lay much stress upon this ingredient. We shall, therefore, take this opportunity to observe, that this direction should always be strictly complied with; for the substitution of brown sugar, or molasses, may often be attended with much inconvenience, especially with very young children, by becoming acid much sooner than good loaf sugar; and for a purpose like this, the difference of price cannot be considered an object.

SECT. III.—*Third Means, or employing a wet Nurse.*

588. We have already stated, that, under some circumstances, a "wet nurse," with all the penalties, that may attend the choice, is to be preferred to the greater, or worse risk, of the child perishing without one. But as this is a matter of necessity, and not of election, we must endeavour to diminish the evil as much as may be in our power by selecting with as much care and judgment as circumstances will permit, one with as few faults as possible. There is, oftentimes, a great difference in those who may offer for this purpose; so much so, indeed, as to render it highly important to be acquainted with a few general rules, to aid in the selection.

589. It may justly be a question in morals, how far one part of society has a right to be benefited, by the injury of another. The avowed object in employing a wet nurse, is to benefit the child for whom she is employed. To do this, she must generally abandon her own child, either to a mercenary, as selfish as herself, or allow it to be brought up by ill conducted, or worse adopted means; for the mother who abandons her own child to suckle that of another, must do it from the expectation of gain: this she cannot realize, but by procuring a place for her own, at a price lower than that which she herself is receiving; and, unfortunately for the poor child, this kind of calculation is but too well understood by that class of people, to whom these remarks

will apply; for they will most scrupulously regulate the *quid pro quo*, by the *sine quâ non*.

590. On this subject, Dr. Clarke makes the following pointed, but just remarks: "If the child live, for whom the wet nurse is invited by the prospect of gain to forsake her own, the child of the wet nurse often dies, or it becomes diseased, or crippled. Her other children are neglected, and her husband, for want of her society, becomes drunken and profligate; she rarely returns home contented with her former situation, but compares her present privations with the indulgences which she has left; the whole comfort of the labouring man's fireside is broken up, and society has only exchanged the life of one child for that of another, with all the disadvantages above enumerated."

591. "On the whole," continues the Dr., "it would be better, perhaps, that the children of the wealthy should be brought up artificially, where the mother does not suckle, because they would have every advantage of good nursing, cleanliness, air, and medical treatment; and would, therefore, have a better chance of living, than the child of the wet nurse, who will want all these advantages."*

592. In our opinion, there is but one method to remove the objections so strongly and truly urged against the system of wet nursing here described, and this is very far from being free from objections; which is, by employing none, but those unfortunate females, who have been by "love betrayed," and such only of these as may have lost their children. This plan would considerably reduce the number of hireling nurses; but, from this very circumstance, we see that several serious disadvantages might arise:—1st, it would lead, in many instances, perhaps, to the neglect, and ultimate death of their own children; 2dly, it would increase very much the price for their services, which would operate as a bounty on their want of chastity. This view of the subject, should, therefore, become an additional reason to the mother to suckle her own child, wherever practicable.

593. It is true, Dr. Clarke proposes another plan, which in our opinion is as liable to objections: but we will give his scheme in his own words. "With every attention which can be paid to them, children brought up by hand will often die. Perhaps, the

* Commentaries, p. 52.

most desirable thing would be, that a strong wet nurse should, as far as she is able, suckle her own and the foster child; and that the deficiency of both, should be supplied by artificial means.”*

594. The objection to this plan, is at once obvious, by referring to a principle in human nature, and on which we have elsewhere passed a remark, (615) that the child of the nurse would be nourished, to the exclusion of the foster child. But to return.

595. Did we undertake to declare in what a good nurse consists, “we should be considered,” says Mr. Friedlander,† “as describing an ideal being. For she should be neither too young, nor too old; as, before she is twenty, she has not arrived at her full development; and after thirty-five, she is upon the decline. She should be well constituted; she should be neither too fat, nor too lean; she should be fresh-coloured; have fine teeth, red lips, and sweet breath; her hair should not be too black, nor too deep a red, nor should she be subject to any violent passion. Her breast should be of moderate size, with a nipple sufficiently projecting and irritable, and yielding milk upon the slightest force; her milk should be neither too thick, nor too transparent, and of an agreeable, sweet taste. Added to these, she should have proper moral feelings, to second such useful qualities. Nor should these good qualities be debased by bad passions, or other defect of character. She should so regulate her diet, as to be entirely subservient to the advantage of the child.”

596. Or, as this has been more elegantly expressed by St. Marthe, in his *Pædotrophia*, as translated by Dr. Tytler:

“Choose one of middle age, nor old nor young,
Nor plump, nor slim her make, but firm and strong:
Upon her cheek, let health refulgent glow,
In vivid colours,‡ that good humour show.
Long be her arms, and broad her ample chest,
Her neck be finely turned, and full her breast;
Let the twin hills be white as mountain snow,
Their swelling veins, with circling juices flow;
Each in a well projecting nipple end,
And milk in copious streams from these descend.

* Commentaries, p. 54.

† *L'Education Physique de l'Homme*, p. 60.

‡ This rule, however, in this country, at least, is liable to many exceptions; since the very best nurses we have ever seen, have been pale.

Remember, too, the whitest milk you meet,
 Of grateful flavour, pleasing taste, and sweet,
 Is always best; and if it strongly scent
 The air, some latent ill, the vessels vent."

597. To this we would add, (what appears to have escaped the above judicious authors,) an exemption from her catamenia. We are, however, by no means sure, that he, and many beside, would consider this a defect in the character of a nurse, as general opinion is in its favour:* on this account, it is worthy of investigation. It is a very common belief among females, that at each return of the catamenial discharge during lactation, there is a renewal of "the milk." We have very often had this circumstance whispered in our ear by some good old woman, who might be recommending a young friend for the office in question, with an emphasis, that bespoke at least the firmness of her belief, if not the soundness of her philosophy. Indeed, so common is this opinion among "nurses," that it has even been "simulated," to enhance the value of the applicant, and to ensure her success.

598. But, unfortunately for such as may attempt to take advantage of such a circumstance, or impose by a mere declaration of it, it must, by all who will duly weigh the subject, be considered as operating against the fitness of the individual who may be so situated. For nature neither acts idly, nor capriciously: and, though there may be occasional deviations from her usual scheme, they must be regarded but as exceptions to the general rule.

599. The laws of nature on the subject in question, are almost invariably as follows:—1st, As soon as the catamenial discharge is arrested, in consequence of pregnancy, the breasts almost immediately undergo a change; a change which is important, because preparative of the great office they are to perform subsequently. 2dly, As soon almost as delivery has taken place, the breasts plentifully secrete nourishment for the child, and during a long period, faithfully discharge this important duty; but in the mean time, the catamenial evacuation is arrested, and continues to be so, in most instances, to any period, almost, that the

* Struve observes, upon this subject, (p. 233,) "A nurse's monthly discharges should either stop entirely, or take place only in a moderate degree, lest the milk might soon disappear."

child may continue at the breast. 3dly, At the time appointed, as a general law of nature, for the re-appearance of the catamenia, (which is from the twelfth to the fourteenth month,) and this evacuation is again established, the milk is found invariably to diminish in quantity, and, also, to deteriorate in quality; and the child to be but imperfectly nourished. The truth of these positions, we are sure, will not be challenged.

600. Now, if this be true, is it not worse than idle to declare, that the exception which nature makes to her general rule, should be better calculated for the good of the being, than the rule itself? If this discharge were so efficient in the production of milk for the benefit of the child, why would not nature have chosen this for the general law, and the suppression of it, for the exception? Or, why is the milk not renewed and improved, upon the natural return of this evacuation? For these reasons, we have invariably objected to such nurses. Dr. Marshall Hall says,* “It has been noticed, that the return of the catamenial period is usually attended by a tumid state of the mammæ. It is not, therefore, surprising, that a diseased state of the uterine functions should induce a morbid condition of the latter organ. Such a morbid condition of the uterus may, indeed, be frequently traced as the cause of a morbid affection of the mammæ: in some cases it has excited tumours in the substance of the mammæ; in other instances, it has *disordered their secretion, and ultimately proved the cause of derangement of the health of the infant.* A familiar example of this occurs in those mothers who have begun to menstruate before they have ceased from suckling: *at each return of the catamenia the child is, in many instances, distinctly disordered in health.*”

601. The age of the milk, as it is called, should constantly be taken into consideration. This is always an important point; and its value is well known to those, who are to be subjected to inquiry, since they will always declare it to be of an early age, should this be necessary. We have no certain marks to direct us upon this point: we have, therefore, almost exclusively to rely upon the testimony of those whose interest it is to deceive, should the truth make against them. When truth can be elicited, either by testimony, or circumstance, we should always prefer the

* On some of the Diseases of Females, p. 142.

“young milk,” when it can be had, even for an older child, provided, the disparity be not too great; and for this plain reason:—it will, (all things being equal,) last longer, and in better condition.

602. It is a received opinion, and generally it is a well founded one, that the substituted milk should be, as nearly as possible, of the same age as the child who is to receive it. In many instances, there cannot be any disadvantage in the observance of this rule, but there need be no absolute conformity to it; since there is no necessary and progressive correspondence in the age of the child and the quality of the milk, after the third or fourth month. Up to this period, as a general rule, the milk is not so nutritious as afterward; but this defect, if it be so, is almost constantly compensated for, by its greater abundance; and this excess can be profitably employed by an older child, so that even this young milk for an older child cannot be considered as a serious objection. But the converse of this rule will not hold good; nor should it ever be acted upon, but as a dernier resource, since, after the twelfth or thirteenth month, the milk almost always diminishes in quantity, as well as deteriorates in quality.

603. Yet it must be confessed, there is no fact, perhaps, better ascertained, than that the milk undergoes changes as the period increases from the time of delivery, but not always advantageously; that is, it is less nutritious in the first few months, than it becomes afterwards, in obedience to the law we have elsewhere recognised; namely, that the nutritive quality of the milk is generally governed by the capacity of the stomach to digest it, and, by the greater or less necessities of the system. This rule, however, has its limits agreeably to another law—that, as the teeth begin to show themselves, the milk may be aided by the administration of other substances, as the increasing demand of the system may require such aid; hence, as has just been observed, the deterioration of the milk after the twelfth or thirteenth month.

604. A nurse should be able to suckle with both breasts; not altogether, perhaps, from the apprehension, that one may not be able to furnish a sufficient supply; but because, when the child is constantly nursed from one, it sometimes contracts a crookedness of form. And we may also urge, collaterally, there will be most probably, not only a more abundant supply, but also a great,

er security for its continuance from two; since an accident may befall the one, and thus deprive the child at once of its nourishment.

605. We may also urge another observance upon women who suckle from both breasts, and which should not be neglected, and it may be considered as an additional argument in favour of two breasts—namely, that the child may be nourished alternately from them, to prevent the constant direction of its eyes towards one point, and thus produce the ugly habit of squinting. This direction should be acted upon from the beginning, that the child may not have a favourite breast established; which is very apt to be done, by a little carelessness on the part of the nurse, or from some cause in the breast itself.

606. On the part of the nurse, this habit may be produced, by her being able to manage the child more adroitly on one side than the other; and, on the part of the breast itself, it may be owing to the nipple being better on the one breast than on the other; or to the milk coming freer from one breast than the other; or its being too free from one of the breasts. This caprice of the child, however, should not be indulged, if it can possibly be prevented, and for reasons that may be collected from what has just been said.

607. It is far from being uncommon for the milk to flow too rapidly for the feeble powers of deglutition of the child; thus threatening it with strangulation. When a nipple is thus situated, the mother should try to prevent it, by gently compressing it while the child is sucking. We have known nurses obviate this inconvenience, by making a ligature of white yarn, to press gently around the nipple.

608. Much reliance is placed upon the appearance of the milk; more, perhaps, than it really deserves; since there is, most probably, a slight difference in appearance in each individual, as well as from the age of the milk itself, without necessarily affecting its properties; at least, we know this to be the case with the milk of cows. Farmers who are in the habit of attending much to cattle, will, from the colour and form of the cow, very nearly determine her capacity to produce milk, either as regards its quantity, or its power to yield cream. Yet, in neither of these instances, would one milk be said to be more wholesome than the other. It is, therefore, possible, that complexion in the human

female may have a certain quality of milk attached to it; and hence, perhaps, arises the objections to the very black, or very red-haired women, who may present themselves as nurses: in either of which, the milk may not be found equal in quality, to that yielded by women who have hair of the intermediate shades of colour.

609. But, perhaps, in the red-haired woman, there may be certain moral qualities, that may unfit them for the office of nurses: they are certainly of a sanguine temperament, and this temperament has attached to it great irritability of temper, as one of its characteristics—hence, in a moral point of view, their unfitness as protectors of young children. Among the ancients, especially among the Romans, the moral qualities were considered of more consequence than the physical capacities of a nurse; and by them consequences of such moment and extent were attributed to them, as, at the present day, at least, we should not expect to find realized. The habit of intoxication, to which Nero so immoderately yielded himself, was said to be owing to the influence of a drunken nurse; and the blood-thirsty disposition of Caligula was attributed to the nipple being smeared with blood, to invite him to take it with more certainty, by his savage foster parent.

610. We have never ourselves looked upon these stories, but as powerful and ingenious fables, to rouse the sympathies of the mother to the delightful duty of nursing her own child. But every body is aware of the influence of example—too much care, therefore, cannot be taken, that the nurse exhibit no improper ones. Every precaution will be observed on her part to conceal her frailties, however watchful the mother may be to detect them; for this reason, the child should be as little as may be from under the mother's eye, that the evil may thereby be diminished as much as possible. Let the nurse be considered as the organ of supply, but not as the object of example; commit to her charge as few duties as possible, and let the mother assume to herself every other but that of suckling, and a few of the meaner, mechanical parts, which should, and must properly be considered, as belonging to the nurse.

611. If this were more constantly done, it would tend much to diminish the inconvenience, and at the same time remove many of the objections, to the "wet nurse;" for by it many

evils would be removed. By this plan, the affections of the child would be as much due to the real, as to the foster mother; and that most painful of all sensations, of seeing the affections of our child transferred to another, would in a great measure be avoided. By this plan, the manners of the plastic child, could be moulded by the will of its proper guardian, instead of being subjected to that of a hireling. And, though last, perhaps not least, the affections, of the parent would not be estranged from that child, which necessity had obliged her to rear by an alien breast. We are well acquainted with the father and mother of a child that was nursed abroad; and though they frequently saw it, and it was returned to them at eighteen months old, they both confess they have less affection for this little unfortunate, than for the rest of their children. It is a source of constant misery to them; and though the child is perfectly a stranger to the diminished affection of its parents, and has in every respect the same attention, and the same apparent love bestowed upon it, and, consequently, by these means suffers no real injury, still, to the parents, it is the cause of endless regret. We confess there may be a little too much refinement in this kind of sensibility; since with them, or rather with the mother, it amounts to self-reproach, though the necessity of sending the child away was imperious; but a fear is constantly presenting itself to her over-sensitive mind, that she may fail in her duties towards it, though she is constantly watching herself, to prevent the slightest neglect.

612. With feelings like these, there can be little risk that the child will suffer from neglect; but if such apprehensions arise in the mind of a conscientious mother, what may not actually happen with those who have no such scruples against which to contend? It, at least, makes an additional, as well as a strong objection against wet nursing; and especially against that still more exceptionable form of it, putting the child out of the house for the purpose. By this practice, all the evils which can possibly befall an infant repudiated from its mother's bosom, will exist in a higher degree, than when it may be nourished in the house; because, it is now removed from the *surveillance* of a watchful parent; the only security it can have, that proper attention shall be bestowed upon it.

613. Here, it will be doomed to all the penalties, that await neglect of every kind, by the absence of the only feeling,

that can bear up against the exercise of it—namely, a mother's love. Ask any mother, how much love it requires to fulfil, justly, the duties of one! Then ask, can these duties, duties so varied, so multiplied, so essential to the happiness, nay, almost the existence of the helpless little one, be performed in the absence of such affection? The answer is no less easy, than true—No! We will not go so far as to say, that there is no exception to this rule—we believe, there may have been, and may be again: but the chance is like the high prize of every lottery; and, like all dealers in this species of gambling, each trusts he may be the holder of the fortunate ticket; and the evil is thus perpetuated.

614. Nothing will so certainly ensure neglect to the child, as a want of affection for it—whether this want of love be on the part of the mother or the nurse. It is unnatural on the part of the mother, and it must be sorely lamented that it happens; since, from the want of it, she is deprived of one of the purest pleasures on this earth; and, at the same time, loses the strongest incentive to the discharge of her duties. On the part of the nurse, it is not to be so much wondered at, or so severely condemned; for she has either lost her own child, and cannot suddenly transfer her affections to another; or it is put from her by necessity, that she may foster the child of a stranger:—she dwells upon her privation; her mind teems with a thousand apprehensions; and, in spite of her best wishes to the contrary, she must look upon her little charge as a usurper of the rights of her own. During this period of conflict, the child is often the sufferer, from a want of that attention, which a proper affection would have ensured, and dies, perhaps, before this necessary love is generated, because it had been too long withheld.

615. Let us, for a moment, look more closely at the case we are now considering, that its enormities may the more easily be exposed. A woman consents that a child shall share her bosom with her own; the motive, doubtless, is, the reward it will bring;—this, at once, declares, that poverty or avarice is the cause of that motive; it is, therefore, a mercenary transaction. She is remote from the watchful superintendence of a mother who has committed her child to her care; she is, consequently, under no restraint as to conduct: the child is, therefore, treated as circumstances or caprice may direct. If a deficiency of milk occur, an event common to all nurses, and an allowance is to be awarded, to

which is it natural she should give the larger share? Her own child! Or, perhaps, she may yield the whole; making the other conform to the necessity, by giving it an improper substitute, for the milk of her breast. Again: if the child be not deprived of its proper nourishment, it may be sadly abridged of the time necessary to its comfort, or essential to its health—filth and all kinds of uncleanness, and even disease, dependent upon neglect, will be heaped upon the passive child thus committed to the care of an unprincipled nurse, because a mother's eye cannot watch, or a mother's vengeance overtake, the horrid breach of trust.

616. Besides, other evils may arise, of a still more serious kind, by this mode of nursing. Dr. Struve, (p. 235,) quotes an anonymous German author of a work on "Matrimony," for an anecdote of a young Count, whose features bear so exact a resemblance to those of his foster mother, that a strong presumption arises against the justice of his claims, to the paternal title and estate—dreadful substitution!

617. When necessity obliges a parent to put away her child, let her seek a home for it in the country; and, if possible, place it with one who may have had the misfortune to lose her own; and whose situation in life would place her above a mere mercenary hireling. So placed, the child would have the best possible chance for health, care and proper nourishment—consequently, the great ends of nursing would be entirely answered. It can never be safe to trust a child for this purpose in a city, for reasons sufficiently obvious,—it cannot receive the benefit of fresh air, especially in the summer; it cannot have that attention paid to cleanliness, that is so important to its health; nor receive a sufficient quantity of nourishment, if it divide the quantity with another; since the person who would undertake the charge, cannot live in a proper situation to afford the first, nor will she have leisure to attend to the second; and her feelings for her own child, will, most probably, tempt her to an unfair division of the third.

618. It must, however, be acknowledged, that a wet nurse has in many instances a hard duty to perform. She is narrowly watched in every movement and in every act; she is sometimes forced to endure the caprice, the revilings, and censures of a wayward and over-fastidious parent—forced to swallow food she loathes; deprived of that to which she has been accustomed, and

which she had always found to agree with her—but should the child be ill, it is owing to her neglect; if in pain, to the improper indulgence of her appetite. And when the time of her probation has nearly expired, pains are taken to alienate the affections of her charge from her, that the self-love of the mother need not be too severely wounded—she is, perhaps, for a time, even forbidden a house she has left with a sincere regret, because she bore a strong love for the child she fostered. And, though we consider the child's exclusive love of the nurse as one of the evils attending their employment, yet we should be sorry to see the faithful discharge of duties rewarded in this way.

619. Did the evil stop here, it would not be so great; but this conduct, as Rousseau justly observes, “instead of making an affectionate son of an unnatural nurse child, she only excites his ingratitude, and teaches him one day to despise her who gave him life, as he already despises her who nursed him with her milk.”

620. Hitherto, we have said nothing upon the subject of drinks for the child during the period we have been conducting our inquiries; having reserved its consideration until now, as a very few words will be sufficient upon this head, though much error prevails on it. It is a practice with many, and especially with people in the lower walks of life, to commence at a very early period of the child's life, to give it a variety of drinks, composed of ardent or fermented liquors; urging, in defence of the practice, that “children should become accustomed to eat and drink every thing.”

621. We have witnessed, very often, with sorrow, parents giving to their young children wine, or other stimulating liquors: nature never intended any thing stronger than water, to be the drink for children—this they enjoy greatly; and much advantage is occasionally experienced from its use; especially, after children have commenced the use of animal food.

622. In the western parts of our state, where ardent spirit has become almost the substitute for water, whiskey is given daily in large quantities, from the youngest to the oldest child; and, so quickly do they become accustomed to this pernicious liquor, that we have seen a child of six or seven years old, drink a wine-glass-full at a draught. The consequences of such a practice can but too easily be foreseen. The directions for the use of drinks, then, can be summed up in a very few words—namely, that no-

thing but pure water, should be given to healthy children. If they be diseased, they come under the direction of the physician; and his province should never be usurped.

623. We have often noticed with how much pleasure even very young children take from time to time small quantities of cold water; and we believe there can be no good reason assigned for withholding its occasional use, though we confess we are at a loss to account for its great success in curing belly-ache, as many good old ladies tell us it does. We think we have seen it very frequently interrupt hiccough; and we have every reason to believe it to be both innocent and grateful to the little creatures, especially during the painful and feverish process of teething.

CHAPTER VII.

SECOND PERIOD—OF WEANING.

624. When the child arrives at a certain age, it is, generally, taken from the breast; and that separation is called “weaning.” This, to an affectionate mother, is a period as full of solicitude, as of pain; and it is consented to with a reluctance, that declares the pleasure the act of suckling had procured, as well as betrays anticipations of dangers, which may too certainly await the change. When weaning is determined upon, from the mere age of the child, it is not at all surprising, that maternal solicitude should be powerfully awakened; since this rule, if implicitly followed, must necessarily have its victims. The propriety, therefore, of this separation, must depend upon several circumstances, that it may not prove destructive or injurious to the individuals concerned. These circumstances may belong—1st, to the mother; 2dly, to the child; 3dly, to the season of the year.

SECT. I.—*On the Part of the Mother.*

625. There are various circumstances on the part of the mo-

ther, which may render it ineligible, or even improper, she should continue to suckle her child—1st, she may be attacked with some constitutional affection, which may so reduce her, as to make it highly improper she should keep the child longer at the breast; she may be seized with some acute disease, which may require repeated, and extensive depletion: so much so, indeed, as to prevent the system from furnishing the proper quantity of food necessary to nourish the child, yet sufficient to increase the debility of the mother, and retard her convalescence. It may, also, become necessary to keep the child from the breast, during the very acute stages of fever; as the fatigue of suckling may do much injury, by increasing the activity of the blood-vessels.

626. In febrile affections of the mother, it may be proper, however, to observe, that the child is never to be withheld from the breast, under the apprehension that it may receive injury; it is only to prevent, in such cases, the mother suffering from fatigue. As regards the child, we feel the fullest confidence in the truth of our observations, when we say, we have never witnessed the smallest injury from permitting it to take the breast under the most violent forms of fever. In the yellow fever itself, we have a number of times witnessed its most perfect exemption from injury, during the entire progress of this disease, and even, indeed, to its fatal termination. Therefore, as regards the child, we repeat, its safety, we believe, is never menaced from these causes. Yet, under such circumstances, it may be highly important to the mother's safety, or necessary to her comfort, that the child be kept from her. And, should the child be of a proper age, or in a proper condition for weaning, as we shall indicate presently, it may be proper to do it at this time.

627. 2dly, The mother may be attacked with some local affection that may render suckling extremely inconvenient, as well as improper; as milk abscess. In such case, the breasts may be so inflamed, and the milk-vessels so impacted, that much injury might be done by the attempt to suckle. Under such circumstances, all things being equal, it would be best to separate the child.

628. 3dly, The supply of milk may be so diminished, even without an evident cause, as to render it altogether insufficient for the support of the child; consequently, both may be injured by a perseverance. If this happen, it will be best, under proper cir-

cumstances, to wean the child. In a word, whenever any thing decidedly injurious to the mother's health, is increased by suckling, it should always be considered as a sufficient reason for separating the child; or whenever any thing occurs on the part of the mother, which so alters the quality of the milk, or so diminishes the quantity, as to render it improper or insufficient for the support of the child, it should be regarded as a legitimate reason for taking the child from the breast; and if every thing concur on the part of the child to render weaning proper, it should be done immediately.

629. 4thly, The woman may become pregnant while suckling; and this condition has ever been considered as a conclusive reason for weaning, be the age of the child what it may. We are, however, of opinion, that this notion has been too hastily assumed; or, at least, has been too generally acted upon. There can be but two reasons why a pregnant woman should not suckle her child—1st, an alteration in the quality of the milk; and, 2dly, a great diminution of its quantity. But these reasons would be valid upon any other occasion; therefore, the inquiry should be, whether either, or both of these, necessarily take place from pregnancy? We know of no absolute reason why pregnancy, abstractedly considered, should render the milk of the woman, who is giving suck, unfit for the purposes of the child; and, for this reason, we should be unwilling to test this subject by argument, simply, as the question should be determined by facts alone. Now, these, so far as we have observed, do not declare positively either one way or the other; for we have seen several instances where children were suckled with impunity, until others were born; and other cases, more numerous, where children were weaned at the usual time, though the mother was some distance advanced in her pregnancy, without the smallest injury having been done to the children so circumstanced; while others, again, were obliged to be taken from the breast at a very early period, in consequence of the injurious effects of deteriorated milk. The rule, therefore, which we have for many years observed, is, if the milk disagree, let the child be separated; but, if it do not, let it be continued at the breast, until the proper time of separation; or, at least, until some injurious effect manifests itself.

630. No possible injury can arise from this plan; for the mother who may be thus circumstanced, will be upon an anx-

ious watch, for the moment of injury; and, therefore, will, the instant it is perceived, make other provision for her child. The symptoms which may denote this state, are, on the part of the mother, the diminution of the *quantity* of the milk; and on the part of the child, its altered *quality*; the latter will declare itself, by being almost immediately rejected, and that in a state of hard curd; or in a thin semi-transparent condition, with a peculiarly disagreeable smell.

SECT. II.—*On the Part of the Child.*

531. When the child has arrived at the eleventh or twelfth month of its age, it is generally thought to be sufficiently advanced to be taken from the breast. But it will immediately strike any one of reflection, that the rule formed upon the age of the child, must be liable to many important exceptions. We shall, therefore, consider this subject under two distinct heads; and these, subject to those variations which the season of the year shall impose upon them. We shall, therefore, regard, 1st, the state of the teeth; and, 2dly, the state of the health of the child.

a—Of the Teeth.

632. Nature evidently intended that the cutting of the teeth should have some meaning as well as use; and, in our minds, that meaning cannot well be mistaken, though she assumes much variety in the period at which this may happen. That the period of cutting the teeth is uncertain, is familiar to the observation of every body; yet, at whatever time this may take place, the circumstance marks the condition of the stomach, or of the digestive powers, in most cases, with much certainty. Thus, if a healthy child * cut teeth at four months, it is more than probable that its digestive powers would be as great as those of a child that might not protrude them, until eight, or even a more advanced period; therefore, if it be proper from the circumstance of teeth appearing, to alter the nature of the food of the child,

* We say, “if a *healthy* child cut teeth at four months,” &c., for we have seen several instances of precocious dentition, in extremely debilitated constitutions—such, therefore, then, must be regarded as exceptions to the rule.

it must be so at the early, as certainly as at the later period. That nature intended that these little instruments should be employed as soon as they make their appearance, is rendered more than probable, by their coming almost always through the lower jaw first. In this situation, they can be called into immediate requisition, when necessary, which is not the case, when they appear first in the upper jaw.

633. It would seem, then, that a child is capable of preparing its more solid food, in proportion to the number of teeth it may have cut; and that, precisely at the period at which they make their appearance. Therefore, the number of the teeth more certainly points out the powers of the stomach, than the period of the child's life at which they may show themselves. In confirmation of this last remark, we may observe, that we have almost constantly noticed, that children who are late in cutting their teeth, neither seemed to crave solid food more, nor digest it better, than those who were much younger, but who were supplied with an equal number of teeth. And, again, we may remark, that the force of constitution is very well declared, by the periods at which the teeth may be made to protrude through the gums.

634. From these observations it will be evident, that the rule founded exclusively upon the age of the child must be of very doubtful application, if not injurious in its observance, since it might sever a child from the breast at a time when its stomach was ill qualified to provide for the contingencies of the system. We should, therefore, say that the presence of teeth is absolutely necessary to the success of weaning, let the age of the child be what it may; and, consequently, that this should never be undertaken until several are cut.

635. Dr. Struve recommends that such children as may be suckled by a wet nurse, should be weaned as early as at six months, lest their future affections be transferred from the mother to the nurse. We cannot see the propriety of this advice, since, if the mother pursue the plan we have already laid down, (610) namely, to make the nurse the mere organ of nourishment, there is but little danger of any permanent transfer of the child's affections. Besides, it is unquestionably much too young, at least in this country, for such a privation; for the child, at this period, has not a sufficient number of teeth to masticate its food.

or, at least, sufficient to declare the stomach capable of digesting it; or this period may arrive at such time of the year, as we have already observed would be inconvenient, or improper. Again, he urges, as an additional reason for this early separation, that, "the trouble attendant on weaning them is generally much greater after six months, when their mental powers begin to expand, and the power of recollection daily increases, so that they cannot, without great struggles, forget the foster mother, and her breast." P. 229. This apprehension is altogether chimerical; at least, as far as regards any evil happening to the child. We have often witnessed such separations; yet we have never known any injury happen to the child, though they have not been taken from the breast, until a much later period. But be this as it may, the benefit of the child's bodily health should be consulted, rather than this temporary affection of its mind.

636. Indeed, Dr. Struve, himself, furnishes a most conclusive argument against his own plan, by declaring, that "if the teeth should appear while these arrangements are taking place with respect to a new system of diet, the child must, without hesitation, be returned to the breast, till the first cutting of the teeth is effected by nature." P. 230. Is this not truly a work of supererogation? How seldom can it happen, that the child must not be restored to the breast, if the period of six months be the age for weaning, and the appearance of the teeth the contraindication to this process? Does not this decidedly declare, that nature did not intend this separation, until the child was in some degree prepared for it by the appearance of these little instruments? We cannot hesitate a moment to believe this to be the case.

b—The State of the Child's Health.

637. It will, at first sight, be evident that the situation of the child's health, must have a decided bearing on the propriety of weaning, at the moment it may be proposed to be carried into effect; for the child may be much reduced by previous illness, or labouring under actual disease, so as to render this privation highly injudicious. If in the former condition, no nourishment at the moment, can be so proper, perhaps, as the mother's milk; or so certainly and freely conveyed, as by the mother's breast; and when nourishment is all-important to the recovery of the

child, as it very often is, it would be highly cruel, if not criminal, to withhold the breast from it—therefore, weaning, as a matter of choice, must not be thought of, at this time. For in the latter condition, breast milk may be the only nourishment proper to give. If so, it should be retained for this useful purpose. Besides, the experiment of taking away the breast while the child is actually ill, has always been attended by bad consequences, even where, at such times, it has spontaneously weaned itself; therefore, it should never be attempted at that time, as a matter of choice.

SECT. III.—*Of the Season of the Year.*

638. It is a fact so well known, that it scarcely requires mention, that the period of the year will much influence a decision, on the question of weaning. The season of the year may render this act convenient, inconvenient, or improper. 1st. The convenient season of the year, will be all that period, when its temperature is moderate; as the months of March, April, May, June, October, or even early in November; when the nights are neither excessive in length, nor the atmosphere severe in temperature. 2dly, It may be inconvenient from both these last named causes; in the months of December, January, and February. 3dly, It may be improper, in case of diseases arising from, or incident to a certain part of the year; being always aggravated in newly weaned children; as in the months of July, August, and September. Therefore, weaning should be in part regulated by these considerations.

639. When weaning has been determined on, and rendered proper by the condition of the child, it will in a great measure be prepared for this process beforehand, if it have been properly attended to, by having occasionally received other nutriment than the mother's milk. The task is then, in part, performed; and the whole of the trial may be rendered less severe, by the observance of the following rules:—

640. 1st, Accustom the child, from time to time, to take other food than its mother's milk, by feeding it on bread and butter, bread and milk, rice and milk, &c., or occasionally on beef, mutton, chicken, or oyster tea; or, by giving small quantities of ci-

ther of these substances, in a solid form, as has already been directed.

641. 2dly, Let the mother give the breast at longer intervals, and gradually prevent its being the principal support of the child.

642. 3dly, Let the child, after a little longer time, receive the breast as seldom as possible.

643. 4thly, Endeavour to excite aversion to the breast, and thus induce the child to withdraw itself from it, rather than permit it to feel the want of it a privation.

644. 5thly, This aversion may be excited in one of two ways—either by touching the nipples with some bitter or disgusting substance, as aloes, garlic, asafoetida, &c., or covering them with a forbidding one, as black wool, ink, court-plaster, &c.

645. 6thly, When you commence this severe process, be firm; and let no importunity of the little pleader overcome your resolution, or your work will never be finished.

646. The process of weaning is much facilitated, by accustoming the child for some time to the use of vessels from which it may drink any nourishing fluid, or even water at first. When a cup, or glass is presented to them, their curiosity is immediately excited, and they at once express their eagerness to possess it, by stretching out their arms, and seizing it with avidity; and no sooner are they in possession of it, than they carry it to their mouths. By taking advantage of this early propensity, children may be soon taught to receive food from almost any vessel that may be offered to them. This plan, however, requires one caution—should the child have teeth both above and below, it may be dangerous to trust them with vessels of either glass or china—some metallic utensil will be much better.

647. A great error is generally committed, immediately after weaning, by giving the child not only too much food, but that of too gross and too solid a quality. This injurious practice has arisen from the supposition that the child not only requires it, but that it is certainly capable of digesting it. This plan of treating children at this time, is replete with mischief; and this mischief is commensurate with the tenderness of the child's age, and the solidity and grossness of the food exhibited. It injures the tone of the stomach, by overloading it; and its digestive powers are destroyed by the severity of the duty imposed upon them; in

consequence of which, the child falls away, and becomes weak in proportion as the plan is insisted on. If there be any latent tendencies to scrofula, rickets, or consumption, they are now actually developed, and the child falls a victim to the overweaning desire of the mother, or its friends to promote its welfare.

648. Where milk will agree, there is no food so proper after the child is taken from the breast. It may be employed in any of its combinations, with good wheaten bread, rice, sago, &c., only remembering, when either of these articles is found to agree, it should be continued perseveringly, until it may become offensive; in this case, some other combination may be required. Or, should the child be pretty well supplied with teeth, it may be occasionally aided by small quantities of either of the animal juices already mentioned; but subject to the restrictions then suggested. Struve recommends, on the authority of Hildebrandt, a soup made of the yolk of eggs and well-fermented strong beer. As well as we can understand his limited direction, it is made in the following manner: two or three yolks of eggs are well beaten together, and gradually added to a quart of beer by briskly stirring it, to prevent curdling; it is then to be well boiled, and sweetened to the taste. Of this, the child may take small portions, several times in the day.

649. It now and then occurs, that neither cow's milk, nor any other, in its unaltered form, will sit upon the stomach of a child when attempts have been made to rear it by artificial means. When this happens, we have substituted, with great advantage, gum Arabic, in solution, in the proportion of an ounce to the pint of water: to this must be added a little sugar, and as much milk as will colour it, if the child be old enough to observe it. Or, we have recourse to rennet whey, a little sweetened, and disguised, if necessary, as just stated. When neither of these succeeded, we have substituted the weak animal juice, as before recommended.

650. Dr. Clarke* recommends, under such circumstances, some farinaceous decoction, mixed with a little cream. Of this we can say nothing from our own experience—nor are we aware to what farinaceous substance he alludes, but suppose that either sago, tapioca, or arrow root, might produce the desired effect.

* Commentaries, p. 57.

651. In the midst of our care for the child, we should not forget that which may be necessary for the mother, or the nurse; for if proper management be not made use of at this time, she may suffer much from the swelling of her breasts. To prevent this, it may be well, especially with one who has an abundance of milk, that she begin to moderate it, as soon as she commences with the preparative steps of weaning, by eating and drinking less; and not having the child so frequently placed to the breast.

652. If these directions be duly attended to, the nurse will not experience much inconvenience from accumulated milk. But with a healthy woman, at whatever period almost she may remove the child, there will be a painful distention of the breasts; for the relief of which, let her observe the following precautions: 1st. After the child is separated, she should abstain as much as possible from all fluid nourishment; eating nothing but the driest food; as crackers, boiled rice, potatoes, boiled meats, or poultry. 2dly. Let her avoid all salted articles, as they will increase thirst, and oblige her to drink. 3dly. Let her drink nothing but pure water, and that in small quantities. 4thly. Let her take a brisk dose of salts, if the pain in the breast be considerable; and avoid exercise as much as possible. 5thly. If the breasts be very much distended, and painful, rub them with a little warm sweet oil, or fresh hog's lard. 6thly. Let the breasts remain without drawing, as long as it may be supportable; and when drawn, let it be only in such quantity, as shall remove the distention. 7thly. Let the intervals of drawing be each time longer.

CHAPTER VIII.

OF TEETHING.

653. In treating this subject, we do not think it necessary to enter into minute anatomical descriptions of the first formation, the progressive development, and successive changes which the teeth undergo, before they are protruded through the gums; we

shall, therefore, confine ourselves to a brief description of the arrangement and order that nature pursues, in accomplishing this important, and oftentimes hazardous process.

654. The teeth are formed, in part, in the fœtus; especially, the deciduous teeth. They are confined in distinct apartments, or sockets; the first being placed above the second, or permanent set. The first sets consists of four incisors in each jaw; two canini, or dog's teeth, and four grinders; making twenty altogether—that is,

8 Incisors, or cutters;

4 Canini, or dog teeth, or stomach, and eye teeth; and

8 Molars, or grinders.

655. It is the teeth passing through the gums, that creates the pain and disorders of teething, by stretching their investing membranes; or, in other words, the tooth augments in size, faster than the parts which enclose it are removed or absorbed. The cutting of the first set generally commences about the sixth or seventh month, and ends between the second and third years. These teeth are always smaller than the permanent set, with the exception of the bicuspid, or small grinders. This is a wise provision of nature, as the jaw enlarges, even to near the adult age, consequently, as the jaws should have both their circular portions filled, the teeth must be proportionally larger as age advances.

656. The order of cutting, is, generally, as follows:—first, the two middle incisors of the lower jaw; then, after an interval of three or four weeks, the corresponding upper incisors follow; but, frequently, the whole four appear in the upper jaw, before the two lower ones are protruded. The two lower canine, one on each side, now declare themselves; and these are followed by their corresponding teeth in the upper jaw. Soon after this, the two first grinders, one on each side, succeed the canine in the lower jaw; those above then follow.

657. After a lapse of from four to six years, four more grinders are added to each jaw; these are permanent. At the age of twenty-one, four more teeth are given, and are called *dentes sapientiæ*, or wisdom teeth.

658. It must, however, be recollected, there are many remarkable, as well as curious deviations from the order just related; some of which it may be interesting to mention.

659. 1. Sometimes children are born with teeth ready cut; but this precocity is no proof of vigour of constitution.*

660. 2. Sometimes the lateral incisors cut themselves before the middle ones; at other times, the canine may be seen before the incisors.†

661. 3. It is now and then observed, that the teeth are very tardy in showing themselves. We have several times seen the first tooth make its appearance after the fourteenth month; and Van Swieten mentions an instance, where this did not happen until the eighteenth month, though the child was perfectly healthy;‡ and a child is now under our care, who has not yet cut a tooth, though rather more than seventeen months old.

662. 4. Rayer mentions a case, where the four canine teeth did not show themselves until the child was thirteen years old. This case was attended by severe headach, sore eyes, and convulsions, for eight days previously to their appearance.§

663. 5. Fouchard relates an instance, where, at six years old, the child had none but the fore teeth.||

664. 6. Brouzet gives an instance, where only one-half of the proper number of teeth were present at the twelfth year of the child's life; and whose gums had acquired the hardness of an old person's.¶

* We have witnessed but two instances of children being born with teeth. We had the first opportunity in the year 1798, and the second, in July, 1829. In this case, there was but one tooth; but which, to this time, (July, 1830,) remains fixed, and is still solitary. This tooth appears to have all the characters of a milk tooth. There were two teeth in the first instance, and, being the middle incisors of the lower jaw, were very troublesome to the mother from their sharpness; and very painful to the child, from their not being firmly set in the jaw; they could be easily moved backward and forward, in consequence of which, the gum became irritated and inflamed. We cut them both out without the smallest difficulty, as they had no roots, nor did they appear ever to have had—they were loosely placed in the ridge of the gum. We do not believe these teeth were ever placed in the alveoli of the jaw—they seemed to be the product of the gum itself.

There are several instances upon record of this kind. Louis XIV. of France, and Richard III. of England, are said to have been born with teeth. They do not appear to be of the smallest use to the child; but are, on the contrary, perhaps, mischievous. Children of this description are said to be less firm in constitution than those who cut their teeth at the regular period—they generally die before the third year. In one of the cases we witnessed, the child died in its fourteenth month: the other is quite young.

† Dict. Scien. and Med. art. Dentition.

‡ Ibid.

§ Ibid.

|| Ibid.

¶ Ibid.

665. 7. Professor Baumes gives the history of a man who never had any teeth to appear.*

666. At the time of birth, the teeth are lodged, as mentioned above, in separate compartments; the deciduous and permanent ones having their respective stations within the cavity of the jaw bone, and placed over one another. Each tooth is, at first, but a pulpy substance, and acquires hardness as the fœtus becomes older; the crown hardens first, the root then becomes ossified, and is hollow, that it may have transmitted into its substance, blood-vessels, and a filament of nerve.†

667. The whole tooth is surrounded by a delicate, sensible, and vascular membrane, which may be considered as its periosteum. This membrane is put upon the stretch—if not regularly absorbed as the tooth increases;(655) hence, the pain and inflammation which so frequently accompany dentition; and upon the division of this membrane depends the relief, so often experienced, by incising the gums.

SECT. I.—*Phænomena of Dentition.*

668. 1st, One of the first signs observed in a child about to cut a tooth, is heat in its mouth, which is distinctly perceived by the delicate and sensible nipple of the mother. This heat produces thirst, and makes the child demand the breast more frequently than before. An itching, most probably, accompanies this condition of the gum; as the child, with a view to relieve it, seizes the nipple, and strips it frequently, by pressing its little jaws close upon it: it also rubs its mouth with its fingers, and presses upon every substance offered to its gums, however hard that substance may be. In proportion as the child acquires age before it cuts a tooth, is this disposition to press upon any thing placed between its jaws; hence, the mother is very often made to suffer by severe pressure upon the nipple.

669. 2dly, A slavering, or a slight salivation, almost constantly accompanies this condition of the gums, and seems intended for four distinct purposes—first, to diminish by this discharge the inflammation and irritation of the gums; secondly, to mode-

* Dict. Scien. and Med. art. Dentition.

† Mr. John Hunter, however, says, he never could trace the nerve distinctly, even to the beginning of the cavity. The nerves supplying the teeth are derived from the second and third branches of the fifth pair.

rate the thirst consequent upon this local inflammation, as the child is observed to demand the breast less frequently, after this takes place; thirdly, to supply an additional quantity of saliva, with a view to assist digestion, as the stomach and bowels are apt to become disordered by too much food, or by its remaining too long undigested: hence, children who slaver much are more rarely affected with bowel complaints, than those who do not run at the mouth; fourthly, it serves as an evacuant, thereby abating the general vigour of the arterial system, which too frequently is roused into inordinate action, by the process of teething.

670. 3dly, After these symptoms have continued a longer or a shorter time, the gum is observed to become redder, a little swelled, and immediately over the points at which the teeth are about to issue, we may frequently observe in the lower jaw, the parts to be semi-transparent; these points are small cells, and very often contain a little effused serum between the edges of the teeth and the external covering of the gum. At these points, we may also observe the little thread-like ridge to be effaced, which mounts the centres of the gums, before any swelling takes place, and the teeth soon after pierce the gum.

571. 4thly, The membrane lining the nostrils very often becomes sympathetically affected; hence, the frequent rubbing of the nose, even to abrasion, sneezing, &c.

672. 5thly, Fever of a slight kind is very often provoked. This shows itself, by heated palms; highly coloured, and oftentimes offensive urine; flushing of the cheeks, frequently, however, but one at a time; great dryness of the lips, and heaviness of the eyes.

673. 6thly, If several teeth are about to appear together; if the absorption of the gums do not proceed regularly; and if the system be naturally irritable, we find the salivation either excessive, or nearly arrested; the gums, too, become much swollen, very red, somewhat spongy, and extremely sensible; fever, even excessive at times; the kidneys furnishing much urine; leucorrhœa in females; impatience, fretfulness, frightful dreams, startings in sleep; laughing, or whimpering while dozing; diarrhœa, more or less violent; swelling of the sub-maxillary glands; sore, or tender eyes,* and convulsions.

* The two last named affections are easily accounted for, as the teeth, maxillary glands, and eyes, in part, derive their nerves from the fifth pair.

674. Though these symptoms but too frequently accompany the act of teething, they are by no means constant. We sometimes see them much more moderate than above described; some one or two only of these symptoms appearing together, and they not alarming; and, again, the whole of the teeth may make their appearance so regularly, and silently, as not even to attract notice.

675. The process by which the teeth appear above the gums, or, as it is commonly called, "cutting of the teeth," is not generally well understood, especially by mothers. It is looked upon, altogether, as a mechanical process; whereas, it is only partially so. We shall, therefore, describe the manner in which this takes place, as it is important that this process should be well understood.

676. The teeth gradually enlarge within their respective sockets. This increase is in three different directions—first, upward, so as to press against the investing membrane and incumbent gum, and thus induce their absorption—secondly, circularly, so as to impinge upon the edges of the sockets: this pressure, when it becomes very strong, destroys the circulation in the membrane which is fastened to the neck of the tooth, so as to kill it, and thus occasion its absorption—thirdly, downward; but the depth to which the root sinks, is limited by the under part of the jaw.

677. From these facts, it will be perceived, that the act of cutting teeth is but in part mechanical; but that part is of great consequence, since it gives rise to that important physiological function called absorption. It is generally thought that the teeth force their way through the resisting gum, but this is not the case, in the strict meaning of the word *forcing*—for the pressure of the tooth below, stimulates the absorbents to take away the interposing membrane, and gum, that a passage may thus be effected for it as it approaches the surface.

678. The belief, that the teeth force themselves mechanically through the gums, gave rise to the practice of employing coral, and other hard substances, to aid the operation. This practice has been praised as rational by some, and condemned as injurious by others. Those who have praised it, have done so upon a wrong principle; while, those who have condemned it, have done so with no better information.

679. Nature herself seems to call for this practice. This

seems to be proved by the disposition all children have to press upon every thing hard or resisting that is presented to their mouths, from the moment dentition begins, to its final accomplishment. It is but complying with an instinct, from which they appear to derive both comfort and benefit; and it is as constantly obeyed, as the necessity is created. Is this desire to press the gums upon every thing hard, a proof of the mechanical nature of cutting teeth, as insisted upon by the advocates of the coral, by presenting the part to be pierced between two resisting substances? We think not: though we are advocates for the employment of certain substances for the purpose of pressure.

680. We are of opinion, that the following advantages are derived, from indulging this instinct in children: 1st, it relieves the pain or anguish of the tender gums, by pressing upon them, as squeezing an inflamed finger, as in felons or whitloes, and in many other instances; 2dly, by gently stimulating the gums, absorption is unquestionably promoted, and the teeth, in consequence, more quickly appear; 3dly, it seems constantly to promote the salivation, by which the engorged vessels of the mouth relieve themselves.

681. The nature of the substance presented to the gums, as well as its shape, are not matters of perfect indifference, as it is generally supposed. For instance, the coral, which is always round and very hard, is improper, because the surface presented to the gums, in consequence of this roundness, is very small, and is thus calculated to do injury, by its partial pressure; and, from its extreme hardness, to bruise the gum. We do not object to the coral, or other very hard substances, upon the principle generally urged by those who condemn their use; namely, "that they harden the gums, and thus prevent the tooth from coming through, or, at least, that it increases the difficulty of its passage;" for we do not believe they "harden the gums," as it is called; but that they are calculated to bruise these parts, increase their inflammation, and thus retard the process of absorption.*

* The process of dentition is sometimes one of difficulty among savage nations; as we are informed, that among the Dacotas, "the children suffer much. In such cases, the gum is never cut; but the children are allowed smooth stones, and other hard substances, to rub against their gums." *Long's Second Expedition, Vol. I. p. 312.*

682. The substance offered to the gums for the purpose of biting upon, may be of inferior hardness to the coral, ivory, &c.; such as a piece of orris root, or scraped liquorice root; but, what is safer, a *flat* ivory ring, or a piece of India rubber. The rubbing of the gums with the finger, affords great relief when they are much irritated; and we constantly recommend this pleasant application. But we decidedly disapprove of any such substance as honey, powdered sugar-candy," &c., to be employed for this purpose, as they only serve to irritate the gums, without farthering the object for which they are employed. The shape of the substance on which the child is to bite, should be nearly flat, and sufficiently broad, that it may present a large surface to the gums: it should, also, be of the proper thickness.

683. There exists a diversity of opinion on the propriety of aiding the protrusion of the teeth, by cutting through the swollen gums. We are, however, of opinion, there should be but one, and that should be in favour of the operation. We shall again consider this subject, when treating of the diseases which may accompany teething. See Diseases of Teething, Book II.

SECT. II.—*Second Dentition.*

684. At about the seventh year, the deciduous, or milk-teeth, are replaced by others of a larger, and more permanent kind. The first teeth are almost always very perishable, and rarely last in a perfect state, until the jaws are supplied by the second crop. They are very apt to decay, particularly with children of feeble constitution, or who have been much afflicted by sickness. The incisors are particularly liable to caries, especially those in the upper jaw—they frequently turn black, and break off close to the gum. The larger teeth are also disposed to caries, and often create much suffering by their decay. We have, however, never observed these inconveniences to influence the second cutting of teeth.* Indeed, sometimes it would seem to favour their growth, by offering less resistance to their passage.

685. Parents very frequently neglect their children's mouths, at this period of life, to the serious disadvantage of their future

* This will be readily understood, when it is recollected, that each set is contained in separate apartments.

comfort, especially when the front upper teeth are labouring under decay. Against this inattention we would wish to warn them, by recommending the removal of the stumps of teeth, whenever they ache, or the gum becomes inflamed. If the early stage of this inflammation be neglected, the coverings of the teeth are almost sure to inflame, and run on to suppuration. Gum-boils are formed, and the roots of the teeth find their way through the gum, by the sockets being absorbed in which they were confined—in consequence of this, the teeth, which are to follow, receive an injury, for the want of due protection from the plate of bone in front of them, which was too suddenly removed. It is, therefore, every way desirable and proper, that they should be removed in good time by a skilful dentist. The same observations will apply with equal propriety to any other of the teeth that may be painful, or that may have the gum surrounding them threatened by abscess. When the teeth are much decayed, and the time is approaching for the appearance of the permanent ones, the child's mouth should be examined, or, rather, submitted to the judgment of the dentist.

686. Before, however, the time for the second cutting arrives, the child undergoes very considerable changes in its person. This change happens generally after the second year; that is, very soon after it has completed its first dentition. The jaws are now observed to spread themselves, and to acquire an increase of strength, since at this time they can break down with the teeth pretty hard substances.

687. The fontanelles are generally closed, or, rather, the soft cartilage with which they were before covered, is now converted into bone of greater or less hardness. The limbs acquire an increase of power, and the child walks with more firmness and assurance. The abdomen loses its roundness, and becomes more flattened.

688. The face becomes more expressive, the eyes acquire more intelligence, and the whole features of the child are better pronounced; this is particularly the case with the nose, which now assumes its permanent form. The chin becomes rounder, and gives more freedom to the teeth within. The internal viscera augment with the other portions of the body; and the senses become more accurate in their several discriminations. The tongue gradually gives utterance to words; and they quickly acquire the

power of expressing their little wants. They thus obviously improve, until the seventh year; at this time, the first teeth gradually drop out, to give place to another set—this operation is called shedding the teeth.

689. We have already observed, that the first teeth are but twenty in number; these are now replaced by twenty-four. At about the twelfth or fourteenth year, four more are added; and the teeth of wisdom follow, at from the eighteenth to the thirtieth year.

690. We have also observed, that it is commonly supposed the first set of teeth are pushed out mechanically, by the second rising under them; but this is not the case, for the following reasons—1st, because the first and second set are not contained in the same cavities or sockets, nor are they immediately opposed to each other by, situation; 2dly, because the first set does not rise in proportion to the advance of the second, which would be the case were they lifted from their position by the second set; 3dly, because there is a destruction of the sockets of the first teeth, while those of the second remain perfect, and increase in size; 4thly, because some of the first set fall out, when there are no second ones under them; 5thly, because the roots of the first set are almost always observed to be removed by absorption, so that the teeth are now only fixed by their necks to the gum, and can be easily moved in any direction; or have become loose.

691. The reason for shedding the teeth, must be obvious to any one, who will give the subject due consideration. In the infant, the jaw is so small when compared even with that of a child of seven years, that much inconvenience would be experienced, did not larger, and a greater number of new teeth supply the place of the first; *à fortiori*, the inconvenience would be greater in the adult, did not these useful little instruments occupy a larger space. For, were the grinders of the child to be the last to be provided, they would by the growth of the jaw in adult age, be thrown so much in advance as to be almost useless, by being removed from the centre of motion.

692. From what has been said, it will be evident, that the first and second sets of teeth are pretty independent of each other; that is, the condition of the first set has little or no control over the second, and the reverse.

693. The order in which the second set appears, is pretty

nearly the same as that of the first—the incisors first show themselves, and are oftentimes much larger than those of the first set, but the first permanent grinders do not usually appear until about the twelfth year, the second about the eighteenth, and the teeth of wisdom from the twentieth to the thirtieth year, as has been already noticed. So that the incisors, and the cuspidati, require about six or seven years from their first appearance, to arrive at perfection; the bicuspidi, about seven or eight; and the molars, about twelve.

694. The increase of size, and the augmented number of the second teeth, sometimes do not find sufficient room in the jaws, to arrange themselves in regular order. When this happens, some of the teeth are obliged to be extracted—but this is the business of the dentist.

CHAPTER IX.

OF THE FOOD PROPER FOR CHILDREN, AFTER THE FIRST DENTITION, AND WEANING.

695. It must not be imagined, that every kind of food is proper, after the child has completed its first dentition. For, though this important change has been successfully accomplished, still, the digestive organs require that only such substances shall be offered, as can be completely and readily subdued by the still feeble teeth. It would, on this account, be highly injurious to feed the child upon such food as would require great powers of mastication, as it would neither have strength nor patience to reduce it to sufficiently small particles; it would, therefore, be at the risk of choking, swallowing it whole, or having it conveyed into the stomach, very imperfectly chewed.

696. The stomach would thus receive food not adapted to its powers, and, of course, would suffer by its being improperly taxed. But it is not the quality of the food, alone, that is to be attended to when a change is contemplated—we should be particularly careful that this change be not made too suddenly.

The stomach, during almost every period of life, seems to acquire, from habit, a power over substances of even an indigestible kind; and is capable of converting them into proper nourishment, when, perhaps, it might fail in subduing some other, which, generally, is of more easy solution. Therefore, a part of the food, at least, that was given during suckling, may be continued with much propriety after weaning.

697. It must, however, be recollected, that an additional quantity will be required, since the child now loses a part of its former sustenance, by the abstraction of the mother's milk. This may be accomplished in one of two ways: first, by increasing the number of meals; or, secondly, by augmenting the quantity at a meal. The last method is preferable, since it permits a longer interval for the digestion of the quantity previously taken; for, as we have already observed, the process of assimilation should not be interrupted, when it can be avoided, by additional quantities of food being poured into the stomach.

698. On this account, it is always important to establish regularity in meals; but for the child newly weaned, the periods, which were formerly observed in suckling, may, for awhile, be retained; taking care to prolong the intervals gradually, that they may, after a time, be reduced to an orderly series. We would not wish, however, to lay down absolute rules for this purpose, since the intervals must in a great measure be contingent upon the powers of the stomach itself; and these must necessarily vary in different children: some digesting much more rapidly than others, owing to the original healthiness of this organ, or to circumstances connected with air and exercise. Thus, children running about in the pure air of the country, will digest their food more rapidly than those confined within the walls of the nursery, and who breathe the less pure air of the city.

699. There is, perhaps, no period of the child's life, in which so much care is required, to avoid overtaxing the powers of the stomach. It is at this time, particularly, that the foundation of a weak stomach is laid, by giving too much food, even of a good quality; but, more frequently, by indulging children in such articles as their little stomachs cannot master. Many parents are of opinion, that children should be indulged in whatever they fancy—believing, most erroneously, that this organ never craves that which would be hurtful to it. Hence, the preposterous and injurious

farrago with which children are sometimes crammed; and hence indigestion, with all its terrible consequences.

700. The food of children cannot well, at this period, be too simple. A great mixture is bad, in every stage of life; but is particularly injurious in infancy, and in childhood. The various jellies from vegetable substances, at this time, are very proper—such as the jellies of tapioca, rice, sago, or arrow-root; these may be taken with fresh milk, with the most decided propriety and advantage, since they are void of all stimulus, and are of easy assimilation. The quantity of these, however, must be regulated by the good sense and discretion of the parent, rather than by the appetite of the child; for this may be naturally inordinate; or artificially so, by ill-judged indulgence.

701. During the period of dentition, the system is almost always in a highly excitable state, and is but too readily roused into fever; therefore, nothing can be more decidedly preposterous and destructive, than allowing children to live upon stimulating articles of food; yet nothing is more common. Parents cannot always resist the importunities of their children, though their better sense at the moment condemns the indulgence; and thus a habit of importunity is created, and in a short period they permit themselves to be governed; and the children in consequence are rendered miserable, by a compliance with their artificial wants.

702. It requires only a little firmness in the beginning, and that not of very long continuance, to make children conform to the dictates of their parents, and to render them entirely obedient to their wills; for it is only necessary to commence sufficiently early, to make the child know it is not to think for itself. Neither its palate, nor its caprice, is to be consulted—the parent must set before it, for its meals, such articles of food as are judged best for it; and it is to be made to understand, that it must eat them, or nothing. If this plan be followed for a short time, all trouble will cease; since, as the child has never had a wish respecting its food gratified at the expense of propriety, it will soon cease to have any; or rather, it will never have any to arise. But if the parent be weak enough to consult the child's taste at table, it will soon demand a portion of every dish, nor be satisfied until it obtain it. We need not say, how subversive this conduct would be of all order, and propriety; or how seri-

ously, nay, oftentimes, how irreparably the child may be injured by it.

703. We must not, however, be understood to prohibit all indulgence to a child at table; on the contrary, we would wish to make them feel every now and then, that we were doing them a favour, by occasionally departing from our general rule; taking care at the same time, however, that we give nothing injurious to the stomach. By this plan, they will perceive their dependence; and also make them grateful for the occasional indulgences they experience.

704. This mode of treating children, has many decided advantages over that of a compliance with the indiscriminate, and oftentimes injurious demands they make at table. Their moral, as well as physical powers are benefited by not yielding to their importunities; for if these be once complied with, there is an end to all future subordination—all control ceases, and health suffers almost in proportion to indulgence. How often does it become essential to confine children to a specific diet! But how can this be effected, if they have been permitted to select their articles of food? Let any parents who have allowed their children to eat indiscriminately of any or every article at table, answer, whether it does not constitute one of their most difficult tasks, to withhold from them the prohibited articles, when they become sick? Our experience declares it to be a common acknowledgment, that it is next to an impossibility to do so, however imperious the necessity for such denial may be. Yet all this trouble might have been spared, if a proper system had been in due time adopted.

705. It is not necessary to confine children always to the same form of food; this may be occasionally varied with advantage; especially, if it be perceived that their appetites flag a little from the long continuance of one kind. Thus, milk, which should constitute the chief article of diet of children until after complete teething, may be given in a variety of very acceptable forms; such as milk and bread boiled or unboiled; rice and milk, sago and milk, arrow-root and milk, &c. Plain rice pudding is a very acceptable dish to almost all children, and may be occasionally introduced as a "*bonne bouche*," with great advantage.

706. We do not hesitate, also, to indulge children, now and then, with small quantities of animal food, especially after they

have their first teeth complete. But animal food should not constitute their principal support even at this time, since it may overtax the stomach, and too much excite the system; and before this time, it should be most sparingly indulged in, though not altogether withheld, for the reasons assigned above.

707. The drink of children should be pure water, or occasionally, milk and water.* There can be no possible propriety in giving them liquors of any sort whatever; for unless as a remedy in disease, the system never requires them; and when indulged in without a necessity, are sure to do mischief. But children should not be permitted to acquire a habit of drinking very often; for it will certainly be mischievous, by over-distending the stomach, too much diluting the gastric juices, and impairing the appetite. During their meals, a moderate quantity should be given to them, as it will then be useful, by forming a more complete pulp of the food taken in, and thus subserve the purposes of digestion. The water given to children should not be of too low a temperature, lest it give pain, and do injury to the powers of the stomach. We think we have seen serious injury result from the too free use of iced water.

708. It will readily be perceived, that after the child has completed his first dentition, he may be permitted, by a gradual change, to eat food of a more nutritive kind—or, in other words, more animal food. But in permitting this, a proper regard should be paid, first, to the kinds of animal food; secondly, to the mode of preparing it; thirdly, the period of the day at which it is taken; and, fourthly, to the quantity employed.

709. 1. *Of the kinds of Animal Food.*—It must not be assumed with too much facility, that even a moderate quantity of any kind of animal food is equally proper. It is no longer a matter of conjecture, but one of very often repeated experiment, that there is much difference in the degree of solubility, if we may so term it, of animal foods; and that, which from long observation has proved to be the most easy of digestion, should be the one generally preferred. On this account, beef, mutton, lamb, venison, fowls, turkeys, pheasants, partridges, &c., are to be pre-

* We have found weak molasses and water not only a very acceptable drink, but a valuable one to such as have a tendency to constipation; children, therefore, may be occasionally indulged with it as a pleasant beverage, as well as a very mild and certain laxative.

ferred to veal, pork, pig, geese, and ducks; since it has been proved by almost universal experience, that the stomach assimilates the former more easily. We are aware that this is not universally the case; but the exceptions only prove the rule. Therefore, when a child is at the age proper for indulgence in a portion of animal food, one of the first class enumerated should be employed.

710. Veal and pork are particularly unfriendly to the young and unconfirmed stomach; and should, therefore, never be selected for the diet of such children. We have known numerous instances of both these substances remaining undigested in the stomach for four-and-twenty hours, and sometimes, even longer, and then thrown up, after having tortured the poor child with pain, fever, or colic, for several hours. The flesh of ducks and geese is nearly as bad as veal or pork, but not altogether so; especially, if care be taken to separate the skin from the flesh.

711. Fresh fish, boiled, of almost every kind, sits well upon the stomachs of children, when taken in moderate quantities, and at proper periods of the day; and even salt fish, in very small proportions, is sometimes very acceptable.

712. Eggs, when not boiled hard, are easily assimilated by most stomachs; they rarely disagree when fresh; and when given in moderate proportions, especially in the morning, are highly nutritious. Nay, they sometimes form a valuable article of food, when beaten up with sweetened water, or milk and water, during convalescence.

713. Salted meats of every kind, are of much more difficult digestion than fresh, if we except pork. Ham is less injurious than the fresh pork; but salted beef, salted venison, and dried mutton, are of more difficult solution than when fresh.

714. 2. *The mode of preparing it.*—It is a matter of great importance, that meats of every kind, should be properly prepared or cooked; for if this be not attended to, the most wholesome may be converted into a temporary poison, by being rendered literally indigestible. For young children, plainly boiled and roasted are the best; and these should be sufficiently done; or, in other words, not too rare. Poultry, and fish, should always be thoroughly well roasted, or boiled; but the roasting should not be carried to the dissipation of all moisture—nor the boiling to the falling to pieces of the article.

715. Game, and poultry, may be treated after the same manner—either roasted or boiled, in a due degree. Some, however, are of opinion, that beef, mutton, lamb, or venison, cannot well be too little done—hence many have these articles brought raw to the table, sometimes, to undergo a second process; while others go to the opposite extreme. We think the proper degree lies between these extremes. It is pretty generally agreed, that poultry, and certain game, as the pheasant and partridge, should be well done; if from among the poultry, we except ducks—the latter are generally preferred underdone. This, unquestionably, improves their flavour; but we are not certain, that it is any advantage to the stomach.

716. Fried, stewed, or highly seasoned meats, are always improper for children; veal-cutlets, stewed veal, fricasees, or ragouts, are always injurious, and should ever be avoided. The same may be said of every kind of meat-pies. Broiled meats are less injurious than fried; especially beef, mutton, or venison. Poultry, treated after the same manner, is less healthful, and should not be as freely given as when roasted or boiled.

717. 3. *The Period of the Day.*—It is very far from being a matter of indifference, at what period of the day, the child receives animal food. Of so much consequence is this, sometimes, that the same article may be either proper or injurious, as it may be given at one time or another. Therefore, as a general rule, a rule, indeed, admitting of but few exceptions, animal food should be taken only in the morning, or at noon; and, as another general rule, we should much prefer the latter, for the following reasons: 1st. The child, in the morning, from the previous night's rest, has its system rendered very excitable at that time; therefore, it should be confined to bread and milk, weak tea or coffee,* and bread and butter, mush, boiled rice, or any other mild food. 2dly, From the appetite at this time being rendered very keen, there is a risk that it will take too much, if animal food be added. At noon, the excitability of the system is a little worn down by exercise, &c.; and at this time, the stimulus of a mode-

* We mention weak tea or coffee from necessity, and not choice. In our large cities, it is not always easy to command the more suitable article, milk. But any injurious qualities appertaining to either tea or coffee, may easily be counteracted; or, rather, they may be so diluted, by the liberal addition of milk or water, as not to be hurtful.

rate quantity of animal matter, may not only safely, but profitably be indulged in. In the evening we would forbid it; as digestion will not be completed before the child goes to bed, and it may have its sleep much disturbed in consequence; or, it may sleep too soundly, from the stomach being oppressed by an over quantity of food; or by the blood-vessels becoming too much filled.

718. 4. *The Quantity employed.*—Children should never make animal substances a principal part of their food, until after the age of puberty. Before this period, there should be a predominance of either vegetables or milk. The vegetables, however, should be properly selected, and but one kind should be used at a time; as mixtures of them are always less manageable by the stomach, than when they are presented singly. The best vegetables are, rice, potato, spinach, asparagus, turnip, and squash—the less proper are, beans of every kind; cabbage, beets cooked with vinegar, peas, sorrel, and cucumbers. Animal substances must be used but in moderate quantities, especially with children who go to school; for if it be made the principal part of the diet of such children, they are sure to be over-stimulated; they become sluggish and drowsy, and thus incapacitated for study. Those children who make milk the principal part of their diet, are always found to be the best students. The fatigue of study is much diminished by employing a mild, nutritious diet; since, by this regimen, the faculties become more acute, and the memory is strengthened.

719. We may then consider it proper, to employ a moderate quantity of animal food after teething, and the quantity may be gradually increased until the age of puberty. Of the period subsequent to this, we have at present nothing to say.

720. In regulating the diet of children, care should be taken not to force any particular substance upon them, after it has been found by fair and repeated trials to disagree. There is both cruelty and bad judgment in doing so. It is cruel, because the poor child is forced to swallow that which is disagreeable to it; and bad judgment, because it is perpetuating a disgust, which, most probably, would have subsided, had it been let alone—for the stomach will oftentimes *forget* injuries, if not reminded of them by repetition.

721. Great care, however, must be taken at this period of life,

that permanent dislikes are not formed against certain articles of food. Temporary disgusts are frequently experienced; and if not counteracted, may degenerate into inveterate aversion, to the great discomfort of the individual. The management of this case is frequently a point of great nicety; for it requires a good deal of close observation, and discernment, to distinguish between a wayward prejudice, and an actual disgust. The former, if indulged in too long, may be converted into the latter, and the latter may oftentimes, by judicious and well adapted means, be entirely removed.

722. Waywardness, or prejudice, should not be yielded to—a little well-directed firmness, is almost sure to overcome it. It is always best managed by reasoning; by representing the inconveniences, and sometimes disagreeable consequences, which may arise from indulging in such feelings; and by persuading them, they would soon become reconciled to the article, if they were to make proper trials to become so.

723. Real aversion arises from a particular *feeling* of the stomach itself, and which is not always under the control of reason, however strongly exerted. This condition may arise from a natural and inherent dislike to certain articles of food, the origin of which cannot be traced; nor can its cause be ascertained. One of the most frequent of this kind is that to mutton. Or, it may arise from some accidental circumstance, as taking too much of any certain article; to this not being in a perfect state; or from its being imperfectly cooked—nausea and vomiting are excited, and the stomach becomes irreconcilable to its presence, ever after.

724. The cure of either of these conditions of the stomach, requires much perseverance and determination—it should always, however, be attempted. The best plan, we believe, (at least it proved so in our own case,) is, first, to make the object endurable to the eye, by viewing it steadily and frequently, for some time: if this be persevered in, with a determination to conquer, it will be found that the object will gradually lose its annoying force. Afterwards, the eye becomes familiarized to its presence, or can look upon it with indifference—this is a great point gained. The next step is to accustom the nose to bear its effluvium without repugnance, when it is near you, at table: when this can be supported, the cure is near at hand; for the stomach

is much influenced by the eye and the nose. The taste is next to be reconciled—this is best done at a time when strongly urged by hunger. Small quantities may be given at a time: should the stomach not now revolt, it may be swallowed with impunity. This must be occasionally repeated, until the aversion is overcome.

CHAPTER X.

ARE THERE SUBSTANCES IN COMMON USE, *ABSOLUTELY* HURTFUL TO CHILDREN?

725. This question is very often asked, and is almost as variously answered. This arises frequently from the fondness or dislike people may have for certain substances, rather than from absolute experience; believing the substance of which they themselves are fond, to be always innocent, and that to which they have aversion, or which may have accidentally disagreed, to be always injurious. To those who are able to judge for themselves, we shall offer no observations upon the various articles of diet constantly presented to them—they must be regulated by their own experience; for, if this will not render them judicious in their choice, they must submit to the penalties attached to voluntary error.

726. Not so, however, is our determination with respect to children, for whose health we profess to be sincerely anxious, and are desirous to promote by every means in our power. We shall, therefore, offer a few observations upon various substances in common use, and of which children are almost constantly made partakers.

727. There cannot be a more absurd question, than “is such a thing wholesome?” since, to be answered safely, requires so many considerations, and so many exceptions, that no one should venture to answer it, either affirmatively or negatively, before duly weighing them. Whenever the late Dr. Cullen was asked this question, he inquired of the speaker, “Does it agree with

you?" If answered in the affirmative, he would declare it to be wholesome. This, for a person who has experienced the effects of an article, is a most judicious answer; but to the child who has no such experience, such answer cannot apply. With a view, therefore, to aid the choice, we shall consider the subject a little in detail, and endeavour to fix some general principles, founded upon the influence of various substances upon the tender and unconfirmed stomachs of children. We shall, therefore, lay down certain *data*, and reason from them as this may become necessary.

728. 1. That nature never intended that children who had no teeth should be nourished by precisely the same aliment, as those who had, and the reverse. Therefore, the food that may be proper for one, might be decidedly injurious to the other; consequently, animal food, pastry, fruit, confectionary, &c., would be positively injurious to the child without teeth. Yet neither of these substances, under proper circumstances, and in proper quantities, should be considered as positively hurtful, since they are only so *quo ad hoc*.

729. 2. The food which may be proper after dentition is completed, may be highly injurious while this process is going on; hence, animal food, or any other stimulating article of diet, may be looked upon as positively injurious—though it be only for a limited period.

730. 3. The food for adult age, if employed before puberty, would often be found highly injurious; though the general experience of the world, would deny their being positively hurtful in themselves.

731. 4. The food which universal experience may declare to be "wholesome," can only be so, when taken in proper quantities, at proper periods and under proper circumstances; therefore, any substance, in undue quantity, and at an improper season, may become hurtful; but must not be declared positively injurious, in a general sense. Consequently, when we speak of food, on which thousands had lived and did well, or from which others have suffered, being either wholesome, or unwholesome, we must mean it is either the one or the other, according to the age and constitution; to the particular circumstances under which the body may be placed, as climate, sickness or health; or to the quantity, or particular quality of the articles in question.

732. It must not, however, be inferred from what has been said, that we consider every article of diet equally proper—far from this: for though we do not admit that any of the usual articles of food are positively hurtful in themselves; yet we declare, it will always be proper to make a choice from them; and on that choice will very much depend the proper health of the individual who may employ them. Thus, we have already declared, that the meat of one animal is better than that of another; and so of many other substances. Yet the best of either of these articles may be highly pernicious, when injudiciously administered; and the worst of them, may be useful under certain conditions of the body.

733. Having made these preliminary remarks, we shall now proceed to our proposed inquiry—Are there substances in common use as food, which generally disagree with, or are improper for children before the first dentition is completed? If there be, what are they? This question is, perhaps, fully answered already in various parts of this work; but, as indulgence in certain articles at the period designated may be too often granted, and thus tend to either the immediate, or remote injury to the child, we shall consider them in detail; and, first,

SECT. I.—*Of Fruit in general.*

734. Fruit may be considered, generically, of two kinds—namely, fresh, and dried.

Of Fresh Fruit.

735. The fresh many consist of apples, pears, peaches, cherries, raspberries, strawberries, melons, dewberries, blackberries, whortleberries, grapes, oranges, pine-apples, &c.

736. Various opinions are entertained of the respective wholesome qualities of the articles above enumerated, when ripe; but we believe there is only one, namely, that they are highly injurious when they are not so. We shall, therefore, always be considered, when speaking of fruit, to mean ripe or mature fruit, unless it be expressly stated otherwise.

737. We limit ourselves, when speaking of the effects of these

articles, to the period before the first dentition, or the first two years of a child's life; and it may be asked,—Is fruit of any kind proper for children of that age?

738. This question must mean one of two things—is fruit a proper article of diet for children, at the period spoken of; or, will the occasional indulgence of a small quantity be improper? As to the first, we would decidedly condemn any article enumerated, since it is almost uniformly mischievous. When fruit is forbidden to children, it is asked, how can it be bad, since they are so fond of it; and since nature has furnished it so abundantly? As regards the first question, we would ask, are not children as fond of wine, ardent spirits, and many other improper things, as of fruit? Yet you would not give them either of these, because they might take a fancy to it. They would eat the fruit of the Jerusalem cherry, the berries of the laurel, or the seed of the stramonium, with, perhaps, equal avidity, though death would be the immediate consequence of the indulgence. And, as regards the second, nature has spread her poisons with as profuse a hand, as she has her more salutary fruits; consequently, the abundance of the substance cannot prove its usefulness as food.

739. We, therefore, are of opinion, that whenever such a quantity of fruit is given to a child, as shall, either by its quantity or quality, materially change the nature of the digested product, it is always bad; consequently, such a proportion should not be permitted to enter the stomach. Nor do we think it always safe, even in smaller quantities. If, on the other hand, so small a quantity be given, as not to influence the digested product, it may be given without injury, but, we believe, never with advantage.

740. Fruit, by most people, is not only considered innocent, but positively useful; therefore, a free indulgence is generally permitted in its use, without attending either to the age, peculiarity, or condition of the person who may make use of it: yet we hesitate not to say, that unless due regard be paid to each of these circumstances, fruit cannot be useful, and very often not even innocent. It is familiar to the experience of every body, that one class of substances is of more easy digestion than another—thus, animal food is of more easy conversion, than vegetable. This, as a general rule, is strictly true; and of animal

food, as we have already remarked, some is digested with much more ease than others. The same remark is applicable to the vegetable class—and of this class, fruit may be considered, with young stomachs, of more difficult solution than almost any of the farinaceous substances in common use; consequently, must be less proper.

741. The insolubility of most fruits, is well known to every body, either from their own experience, or from their observations upon the confirmed adult stomach of others; and, with respect to children, the fact is notorious to all who may have charge of them. Who does not constantly witness these substances passing rapidly through them unchanged, and especially at the age of which we are now speaking? Can it, then, be for a moment insisted on, that that substance which the stomach cannot master, is useful, or even innocent? Let us not then be deceived, by mistaking the agreeable for the useful.

742. At the age in question, the indulgence in fruit of any kind should be very limited, indeed; and especially where the stomach and bowels are not in the most perfect health. After this period, it may be given in moderate quantities, without much risk; but if there be even a small excess, the child is sure to suffer from a derangement of the stomach or bowels, or both; or, if it escape from these evils, the stomach will be found less disposed for its ordinary meals, and the articles will be seen to pass unchanged.

743. There is a vulgar error on this last point which deserves correction; as it has no inconsiderable influence upon the conduct of many, in administering fruit to children. The passing of fruit unchanged through the bowels, has frequently been urged to us as a proof of its innocent nature; for, it is said, that “if the child have taken a little too much, or if the stomach cannot assimilate it, it always comes away. Now, this coming away unaltered, is a direct proof that the stomach cannot digest it; and, of course, the child has been labouring under the effects of indigestion; and though, in some instances, it has not produced any violent symptoms, it must, nevertheless, be admitted, that the child runs a great risk. We should, therefore, lay it down as a positive rule, that whenever this is observed with regard to any substance, no matter what, the stomach itself is out of order, or that the particular substance is not suited to its powers, or condition,

and must not again be urged upon it. It is owing to inattention to these first revolts of the stomach, that dyspepsia is produced; and farther heedlessness, too certainly confirms it.

744. There is another vulgar error with respect to certain fruits, which is even more mischievous than the one just mentioned; namely, that they are not merely innocent, but positively wholesome. This opinion is especially entertained of the dew-berry, and the blackberry; hence, they have but too often been administered to children, who were labouring under acute or chronic diarrhœa, to the imminent danger of their lives. We have witnessed, this season, (August, 1825) three instances of dangerous cholera, brought on by means of these fruits; and one which had nearly proved fatal, from the use of the syrup of the blackberry. These instances are far from being rare; we have observed more or less of them, ever since we have been engaged in practice.

745. We are fully aware how difficult it is to eradicate a long established error; and that the *dictum* of an old woman, will very often outweigh the experience of the physician. We do not, therefore, calculate too largely upon the force or influence of our opinion, upon this important point. We feel it, however, a duty to state, that which has been sufficiently confirmed to us with respect to these fruits, when exhibited as a remedy—namely, that we have never known them to be useful; but we have very often known them to be injurious.

746. Another vulgar error is deserving of notice—namely, that “when cherries are eaten, the stones should be swallowed, to promote digestion.” This is one of the most absurd, as well as dangerous errors, that popular opinion continues to cherish; it is one replete with mischief, and has neither reason nor experience to countenance it. This mischievous practice, most probably, took its origin, from the mechanical theory of digestion, or from some ill-selected analogy. It was formerly taught, that the human stomach subdued the substances presented to it for digestion, by a mechanical action; and that, consequently, the cherry-stones performed the same duty in it, as the gravel in the gizzards of fowls. This opinion has been long disproved, by the most satisfactory experiments; but the errors to which it led, still, unfortunately, continue to prevail; and this with a class of

people, from whom one would rationally expect better formed notions.

747. The same disposition to theorize, has found a utility for the purpose of digestion, in eating the skin of the apple and peach. They say, that nature intended the skin to promote this object; or why were they formed? The same reasoning would render it proper to swallow the shell of the walnut, and the rind of the pine-apple; but did not the opinion lead to practical injury, it would not have been worth the trouble to expose its absurdity.

748. From what has been said, the following principles, we think, may be established:—

749. 1. That before the child has attained its second year, fruit in any quantity cannot be considered useful; though very small quantities, properly administered, may do no injury.

750. 2. That after the second year, small quantities of fruit may be given with less risk; especially, if we duly attend to the circumstances which should always regulate its exhibition.

751. 3. That it should never constitute the chief article of diet; since, in such a proportion, it would so alter the digested product, as might seriously injure the functions of the stomach.

752. 4. That fruit, of almost every kind, is less digestible than any of the farinaceous substances in common use.

753. 5. That when the stomach is incapable of assimilating it, much disturbance in the stomach and bowels is excited, terminating oftentimes in cholera; or,

754. 6. If it do not produce this evil, it passes from the bowels in an unaltered state; and when this is the case, it is a certain evidence that it is injurious.

755. 7. That, as a general rule, the older the child, the less the liability to injury from fruit, provided it be taken at proper times, and in moderate quantity.

756. 8. That it is an error to suppose, that any fruit is positively useful, as a nourishment, or as a medicine to young children.

757. 9. That it is also an error, and one of a serious kind, to swallow the stones or skin of fruit, with a view to promote digestion.

SECT. II.—*Of Dried Fruits.*

758. The dried fruits are, raisins, cherries, apples, peaches, figs, prunes, &c. Of these it may be said with safety, that they are still more exceptionable than the fresh, but not all in an equal degree. The most injurious are the four first named. Raisins are extremely indigestible, unless deprived of their skin; and should never be eaten, without attending to this precaution—there is no stomach, unless it be that of the ostrich, of whose powers of digestion we hear so much, that can master the skin of a raisin—we know from observation, that a hog cannot overcome this insoluble substance; yet they are given by indulgent parents, in large quantities to children of every age, and of every power of stomach, to either their immediate or remote injury. We have known three instances of convulsions and death, from the excessive use of this fruit.

759. Of the dried cherries, apples, and peaches, it may be said, that they are altogether unfit to be received into the stomachs of children, and especially young children.* They are rendered fitter for the purposes of food, by having them well stewed; but even then, they should be taken in very moderate quantities—particularly the cherries and dried apples. The fig, and the prune, are less exceptionable than the articles just named: but they cannot be freely indulged in, with entire safety, by young children. The adult stomach, when sound, bears them with advantage when taken in moderation; especially where the bowels are tardy—but they never should be given for the same purpose to young children.

* We saw an instance of long-continued and severe convulsions in a child of four years old, from eating a quantity of dried apples, which he had procured by stealth; his recovery was doubtful for a long time, and nothing but being relieved of the offending cause, by an active emetic, saved his life.

CHAPTER XI.

OF EXERCISE.

Of such importance do we consider a well directed and properly organized system of exercise, that we must hold every system of education imperfect, that does not include it among its essentials. For, without this, we can declare, from extensive personal observation, much mischief is sure to follow; while, on the other hand, we can safely say, where it has been well systematized, it has uniformly tended to the successful development of the body, as well as contributed largely to the invigoration of the mind. With these objects in view, we were mainly instrumental in establishing the gymnasium, that is now dispensing so much benefit to youth and others, in our city; and to the practices of which we cannot too pointedly recommend the attention of parents and guardians, who may be solicitous about the welfare of youth under their care.

760. Under the head of exercise, we shall include, 1st, the exercise or motion useful or proper for very young children, up to the period of their beginning to walk; 2dly, walking; 3dly, other modes of exercise—A, riding in a carriage; B, riding on horseback; C, games of various kinds; D, dumb-bells, and the various exercises of the gymnasium.

SECT. I.—*Carrying in the Arms.*

761. Under this title, we may comprehend almost the whole of the motion, or exercise, which can be usefully employed, for very young children; and this may commence with advantage, a few days after birth. An error is very frequently committed by nurses and mothers, in confining the child constantly to the bed, or cradle, covered with clothes, or buried in feathers, instead of carrying it about the room several times a day, carefully placed upon a pillow, that it may enjoy a renewed atmosphere,

and have an opportunity of exercising its little limbs, to which this important indulgence so strongly invites them, even before they are a fortnight old. The custom of confining a child at this early period of its life, arose from the absurd aphorism, that "the more a child sleeps, the faster it grows."

762. It should be ever kept in view, that children, with respect to exercise, are precisely on a footing with adults, making the proper allowances for degree. The muscular system of the child, like that of the adult, can be strengthened only by exercising it; and the circulatory, nervous, and absorbent systems, can only be kept healthy, by the due and proper play of the muscular; therefore, for the purposes of health, it must acquire tone, by a well regulated plan for this purpose, or all the systems just mentioned will become deranged, or even diseased.

763. If this be true, it will readily be admitted, that the sooner we commence with this important part of physical treatment, by a well adjusted plan, the sooner will the muscular system acquire the tone, so important to the many other functions of the body.

764. To begin, then, with this useful practice sufficiently early, the child should be taken several times every day, after its wakings, from its nest of feathers, (even at ten days old,) and, placed upon a plain, and sufficiently soft surface; freed from all restraint, and left to the enjoyment of its own sensations. In obedience to these, it will soon be found to exert its feeble limbs in every direction; and manifest, by its repeated efforts, the delightfulness of its feelings. It will discover, after a few trials, how much it enjoys this freedom from restraint, and the advantage it is deriving from it, by an increased motion, and force of its limbs. In the position we recommend, namely, upon its back, it has a full opportunity of exercising all the larger muscles of the body; and it is surprising, when permitted, how rapidly the child acquires strength.

765. All seem to be aware of the necessity of exercise to strengthen the muscles; but there are very few who institute a regular and proper series of experiments, for this purpose. Indeed, the exertions the poor infant is obliged to make in the hands of its nurse, are calculated to do it more injury than good. The pride of the nurse, and too often that of the parent, becomes highly interested in the display the child is forced to make, in keeping itself erect; and when from long and often repeated trials, the little creature is able to straighten its spine, it is

praised for its forwardness, or quoted as a prodigy. But this kind of management is decidedly wrong; since all this apparent vigour is oftentimes procured at the expense of some permanent derangement of the spine.

766. It will be evident to every reflecting mind, that the incompletely ossified spinal column, is but ill calculated, at the period now supposed, to sustain the weight of the whole body, and the head beside, and, when forced to do so by this injudicious management, it must yield, in a greater or less degree; hence, crooked spines. We would, therefore, peremptorily forbid all such displays. We are well acquainted with a nurse, who from a perseverance, worthy of a more noble and useful object, teaches the children she has charge of, to sit perfectly upright, within the period of the month; it is truly ludicrous, as well as unnatural, to see the little creatures sitting as straight as if they were stiffened by a back board. What may, ultimately, be the result of such a plan, remains to be proved—reasoning upon the subject, leads to nothing but gloomy anticipations.

767. From what has been said, it will appear, that, however important exercising the muscles may be, it, nevertheless, must be done, without obliging the spine to support the weight of the body; as it must do, when the child is placed in an erect position. The employment of the muscles, must be the result of the voluntary act of the child; and it will most certainly and successfully exercise its volitions, when placed in a position which frees it from restraint; as on its back, with its head a very little elevated. When thus situated, with all its limbs at liberty, it will, in a very short time, become so familiar, and so pleased with its exertions, that it will every day more and more employ the muscles of these parts; and, in a little time more, it will use those upon the posterior part of the body, to the manifest advantage of the yet feeble spine.*

* The universal and preposterous practice of *bracing* children, as it is called, by straps, backboards, corsets, &c., has ever given rise to the disease they were intended to prevent or to cure—namely, obliquities of the spine. This affection first shows itself; by one shoulder becoming lower than the other, and by a projection of the portions of the shoulder blades next to the spine. These bones are so elevated, sometimes, as to appear detached, or separated from their proper location. We would therefore, advise a mother, when she observes this change in the child's shape, to apply immediately to an experienced physician, instead of attempting to cure it, by the several contrivances just enumerated.

768. Another error is usually committed; namely, the mismanagement of the head of the child, during all the various attempts to make the child sit straight. During this discipline, the head of the poor little infant is permitted to hang on one side constantly, or it is suffered to roll about as if it were but loosely attached to the body. The injuries arising from this inattention, are—1st, the child acquires a habit of holding its head upon one side, which is difficult to overcome; it also does mischief to the neck itself; for, 2dly, if permitted to roll about, injury may be done to that part of the spinal marrow which passes through the vertebræ of the neck, by the head making, from some cause or other, too large a sweep; or, in other words, describing too large a portion of a circle.

769. To prevent these evils, we would recommend,—first, that the child should never be placed in an erect position for any length of time, before the spine is sufficiently confirmed to support the superincumbent weight, and the muscles have acquired strength to support the body in that position, without too much fatigue; and, secondly, if the child must be placed in an erect position for any *necessary purpose*, the head should always be steadily sustained by the hand of the nurse being placed under it. The cautions now suggested are particularly important in respect to feeble, or very heavy children, or those disposed to rickets or scrofula.

770. The child's body may be placed so as to make an angle of a few degrees with the horizon; but when this is done, it should always be by the hand of the nurse sustaining the back and head, by placing it against the shoulders and head. The child may be carried about in this position, and gently exercised, by a movement up and down; this may be repeated several times a day, for a minute at a time. But we must earnestly deprecate a too rapid motion, even in the direction prescribed; but, especially, a whirling motion. If the movement prescribed (770) be gently and properly managed, it not only tends to give strength and vigour to the child, but becomes a certain source of amusement to it, as is clearly demonstrated by its joyful expressions, and strong attachment after awhile, to those who perform it.

771. We have said, this motion should be gently performed; we would rather wish to be considered as insisting upon this as an essential condition; for if it be rudely done, mischief may

follow, from the sudden shock the nervous system may receive. The child, when this movement is carried to excess, expresses its dislike, and apprehensions, by the sudden starts of its body; by its wild and affrighted looks; and by its convulsive sighs, and crying. We have strong reason to believe, in one instance, that death followed, from this movement being too suddenly and violently performed. When properly conducted, it has all the advantages of swinging. The same censure must be passed upon running violently with the child in the arms, hastily descending the stairs, jumping, &c.

772. After the child has acquired sufficient strength to sit up without much support, it may advantageously be indulged in it, if properly managed;—that is, not too long at a time, nor too often repeated. The spine of the child will rarely acquire such firmness, as to render this proper, before the third month—after this time, it will, all things being equal, gain strength daily; and may now be occasionally carried on the arm of the nurse, provided she handle it properly—for on this much depends. We shall, therefore, lay down the following rules, for carrying children on the arm:—

773. 1. It should never be so placed upon the arm, as either to oblige it to support itself, or fall backward. To prevent this, the hand of the arm on which the child does not rest, should be so placed over its body and chest, as to give a certain support to the whole body.

774. 2. It should never be carried upon the arm, without additional support, until the muscles of the neck have acquired sufficient strength to carry the head straight, for reasons already suggested.

775. 3. It should not always be confined to one arm; for if it be, it will, from maintaining one position too long, contract a habit of leaning to one side, or become crooked—therefore, the arms should often be changed.

776. 4. It should not be made to put an arm around the nurse's neck, while placed on the arm for carrying; as it will do injury to the side and back, by forcing out the shoulder-blade.

777. 5. Neither should it be too firmly grasped by the nurse's arm, lest it bend or distort the bones of the pelvis, thighs, and legs; and on this account, the child should not be often trusted to

those who are unskilled in carrying one; as they always embrace the child very firmly, from an apprehension they may let it fall—an experienced nurse can carry a child without much pressure. This rule is of especial consequence to such children as may be disposed to rickets.

SECT. II.—*Of Walking.*

778. Before a child can learn this important art, if we may so term it, it has to acquire several powers—1st, that of using its limbs in all directions; 2dly, crawling; 3dly, standing, or balancing; 4thly, the moving, without falling, of one leg before the other; which in its perfection, is walking.

779. We have already directed the best method of ensuring the first, which, if properly pursued, will quickly lead to the second, in which the child should be most freely indulged, without regard to the soiling of clothes, or the destruction of such perishable articles as it may be able to lay its hands upon. Most parents have an aversion to this necessary acquirement, and too frequently endeavour to interrupt it, to the decided injury of their offspring. We have constantly observed, that those children who learn to crawl, are always more robust, and better confirmed in their walk, (though they sometimes do not begin so early,) than those who have been taught to walk without this useful intermediate step. The act of crawling exercises every muscle of the body; and this, without much fatigue—since it is a voluntary act of the child; besides, it is highly pleased by the employment of this power, for it always has an object for its exertions—consequently, is sure to be amused. This exercise, therefore, not only gives vigour to the body, but also agreeably stimulates the mind.

780. Children permitted to crawl, will soon wish to do more; hence, they will endeavour to lift themselves upon their feet by the aid of a chair; and though they may fail in many attempts, they seem to feel it to be a point proper to gain, and will persevere until they accomplish it; by this they learn—1st, to raise themselves from the floor; and, 2dly, to stand, by holding the object on which they have seized. Presently, they can balance themselves without holding; and will proudly show you, they

can stand alone. But fearful of yet trusting themselves to move their limbs, without support, they do not venture to put one foot before the other; but by seizing a chair, or some other support, they will venture to advance as far as the limits of their support will permit. This little adventure is repeated again and again, with increased exultation; when, after numerous trials, they feel confident of their powers to balance themselves, and, to the inexpressible joy of the parents, they run alone. When children learn to walk by this important gradation, it is always found that no injury is done to the proper form of the legs, which but too frequently happens by the other plan.

781. It may, therefore, be useful to caution parents and nurses against the unnatural practice of forcing very young children to "find their feet;" since curved legs are almost sure to result from the practice. Children disposed to rickets should be particularly preserved from this mischievous exercise. For it, doubtless, was the intention of the Creator, that children should not walk before a given period; therefore, to prevent an abuse of this law, he annexed a penalty to its infringement.

782. We grant that children may be taught to walk, without previously crawling; but, at the same time, we must insist that there is no advantage in this plan—nay, there is often positive injury, the limbs are almost sure to be curved, and the walk of the child is marked by an uncertainty which does not obtain by the other plan. By crawling, the bones of the legs and arms strengthen with the muscles; and this, without curvatures of the legs, since they are not forced to support a weight beyond the power of resistance.

783. Many plans have been devised, to teach children to walk—we without ceremony condemn the whole, since they all consist in obliging the child to make exertions injurious to the form of their limbs—of this kind are the go-carts, the leading-strings, &c. The go-cart, and leading-strings, are banished from the nursery, in almost every part of this country; and we sincerely hope that no false theory, or an attempt at a "royal road" to walking, may ever cause them again to be introduced. Those countries in which these artificial means have been most fairly tried, abound most with ill-formed legs—an indisputable evidence of their mischievous tendency.

784. Teaching children to walk by taking hold of one of their hands, is also a very exceptionable mode. In this case, the arm

is severely extended; and, should the child make a false step, it runs the risk of a dislocation, by the violent and sudden attempt to save it—or, should it escape a dislocation, the arm suffers a violent extension of its muscles and ligaments, from which it is sometimes a long time before it recovers, as well as subjecting the poor child to a great deal of pain. Both hands being held at the same time, is less exceptionable, but not entirely free from objections. The best way is to let the child depend pretty much upon itself—taking care to break a fall, by gently seizing it round the waist.

SECT. III.—*Of other Modes of Exercise.*

785. After a child has learned to walk with tolerable steadiness, it is eager to employ its locomotive powers, by moving almost constantly from place to place, either to relieve *ennui*, or gratify curiosity, or both; hence, the desire of motion being so universal, that it may be considered an instinct. This kind of gratification they should be liberally indulged in, since it keeps the mind amused, and profitably employs the muscular system—consequently, there can be no exercise so unexceptionable as that of walking under proper circumstances. But it may happen, that from the state of the weather, indisposition, or the distance to which it is desirable to remove them, other modes of transportation must be resorted to; and the choice of such as present themselves, must depend upon the age of the child, distance, &c. We shall, therefore, consider—

A—*Riding in a Carriage.*

786. Our remarks upon carrying children on the arm, lead to the conclusion, that it is not always the best mode of exercising them; therefore, we are of opinion, that much advantage is oftentimes gained by the well regulated use of the “baby carriage.” This, however, to be as useful as it is capable of being, must be governed by the following considerations:—1st, the vehicle itself; 2dly, the mode of using it; and 3dly, the child.

787. 1. *The Carriage.*—It should be so constructed, as to render it difficult to be overset; therefore, the wheels must be made low, and revolve easily, and equally; the axle should be wide, that the carriage may have even an over proportion of base. The body should be sufficiently long to permit the child to lie at full length, when necessary; and of such breadth, as

shall prevent its being cramped, when placed in it. It should be of such depth, as will prevent the child from falling out; and its height should be so arranged, that the child may be protected from the sun, when this may be necessary. The wheels should be secured against running off, when the carriage is in motion. The body should be placed upon low springs, of sufficient elasticity and strength.

788. 2. *The mode of using the Carriage*—is highly important, since an error in this point may defeat its best uses. To be useful, therefore, it should always be drawn steadily, and at a very moderate pace; it should never be violently jerked, nor rapidly put in motion. The place for its employment should always be smooth, and free from obstructions; as its passing over rough places endangers the child, since it may upset, or do injury by the severity of its motions.

789. 3. *As regards the Child*.—That this kind of exercise may prove beneficial, the child must be so disposed in the vehicle, as to be perfectly at ease. The most suitable position for this purpose, will depend very much upon the age of the child; we may, therefore, divide this into three periods—the first period is that, before the child can securely sit alone; the second, is where it is able to sit alone, but cannot walk; the third, is after the child can run alone.

790. The position for the child in the carriage, at the first period, should be a horizontal one, and, for the reasons suggested, with its head elevated. It should be secured against receiving injury from a sudden jolt, by laying it upon a pillow, or an elastic mattress; and so confined at its sides, as to prevent its rolling when in motion. The one for the second period, may be that of sitting; but the child must be so secured, as to prevent too much motion of its body, when the carriage is moving. For the third period, the same position will be proper; but there will be less necessity for the confinement just spoken of, as the child can now balance and support itself. Yet it may be proper to observe, that the greatest care should be taken, at every period, to guard against the child's falling out.

791. Children, when placed in the carriage, should never be kept standing in the sun, if it be warm; nor should they be kept motionless, when the weather is very cold. Indeed, it would always be best, not to expose to either extreme; since the risk of injury is oftentimes greater than the benefit. When in

the carriage, in cold weather, they should be amply covered, since, from the passiveness of their situation, they will require additional clothing. Nor should the ride ever exceed half an hour at a time, especially if the child be observed to become sleepy—and this for two reasons; first, because it is always injurious to children to sleep in the open air; and, secondly, because, after a few trials, they will much prefer this mode of going to sleep; and thus destroy a well established habit, to the serious inconvenience of the parent or nurse.

B—*Riding on Horseback.*

792. Perhaps there is no mode of exercise, equally beneficial with this, if we except walking—it is one which employs all the energies of the rider, and that in the most agreeable way. There is scarcely a muscle unemployed, and, at the same time, the mind is highly amused. We must, however, be understood to speak of those who feel a confidence in their horsemanship; for such only derive benefit from it. Therefore, a child, either male or female, should be early instructed in this important art. We say, they should begin at an early period to take lessons, when practicable; since, by doing so, they become more confident, and better confirmed in their seat. When placed on horseback at an early age, they quickly acquire intrepidity; first, because they have a natural attachment to a horse, which they suppose will not do them harm; and, secondly, because they cannot well anticipate all the risk they might run, either from the mismanagement of the reins, or the viciousness of the animal itself. On this account, children are fearless on horseback, almost as soon as they are placed there; and their enjoyment keeps pace with their trials; and for these reasons, the sooner they begin, the better for every purpose of health, or future usefulness.

793. We would advise, under circumstances which can command this indulgence, that children commence, soon after their sixth year, to receive instructions under a careful and experienced master; and, as soon as they have acquired “a good seat,” they may accompany their father, a friend, or a careful servant, for farther improvement and exercise. A timid child should not be forced suddenly to mount a horse, for any purpose; he ought to be placed under the immediate care of a judicious person, who by address and management will remove his apprehen-

sions, and cause him eventually to acquire a confidence in himself. On this account, a riding school is deserving of patronage.*

C—Of Games, and Exercises of various kinds.

794. In large cities, there is a great variety of games and exercises presented for the amusement of children; some of which are very useful, and others extremely injurious. It would occupy too much room to particularize the varieties, and reason upon them in detail. We shall, therefore, merely point out the tendencies of them all, and allow parents to choose such as will best conform to the general scheme of physical education.

795. All the active games and exercises, (and these are the kinds we are now considering, since they afford that important aid to health, exercise,) employ all the muscles of the body with more or less severity; the remote tendencies of which, are to confirm the strength, and improve the skill of such as sufficiently employ them. But these advantages are not always gained without risk; either from the nature of the game or exercise itself, or from the severity with which it may be pursued; therefore, such as really may be attended with danger, had better be avoided at once; and only such followed as are not necessarily accompanied by risk. Of the former kind, may be considered skating; going into the water unprotected, before they can swim; descending from the tops of houses by a running rope, or windlass; diving or jumping into the water from a great height, &c. Of the latter, we may reckon playing at marbles, beating a hoop, flying of kites, playing at ball, or fives, shinny, &c. These last are not necessarily dangerous, but may be so accidentally—we would, therefore, lay down the following general rules upon games and exercises:—

796. 1. Not to permit a child to engage in such as are in themselves dangerous, as those above enumerated: and not to allow the plea, that A, B, and C, daily engage in them without accident, to outweigh the force of positive examples to the contrary.

797. 2. To allow a child to engage only in such, as are not necessarily injurious; and even such within the bounds of mo-

* Since the above was written, Mr. Blythe has opened a school for riding. His success appears to have been no less satisfactory to himself, than useful to his numerous pupils:—his skill, experience, and attention entitle him to the entire confidence of his fellow citizens.

deration, in order that evil may not follow the indulgence—that is, not to overheat the body, nor check perspiration too suddenly.

798. 3. To choose such of the latter, as may prove least injurious to the child's morals; for, by associating with vulgar characters, in the performance of certain games and exercises, much risk is incurred. On this account, a child is seldom safe, either morally or physically, who is permitted to choose its companions, the nature of its game, or amusement, from under the parent's inspection and control.

799. Girls, from necessity, can have fewer games or amusements than boys; but there is a sufficient choice of these, for all the purposes of health, if properly pursued—such are shuttlecock, and battledore; skipping the rope, dancing, &c. Where circumstances will permit, a well arranged swing is one of the best, as well as one of the most delightful modes of exercise, to those who can enjoy it. Riding on horseback, we are sorry to observe, is too little practised among our young females. Unfortunately, this, like many other points essential to health, requires the powerful influence of “fashion,” to bring it into use. There is, perhaps, no city in the world, where females enjoy this most salutary exercise so little as in this; and, perhaps, there is none that offers stronger inducements to employ it. There are always masters to teach the art, where encouragement is given: but of the number who have offered their services to the public, not one, we believe has succeeded. On what does this supineness rest?

D—*Dumb-Bells.*

800. The “dumb-bells” have been strongly recommended as an exercise for young people, especially when the weather will not permit it to be taken out of doors. These machines may be profitably employed, we have no doubt, where the weight of them, and the manner of using them, are properly regulated. The general idea is, that they should be made as heavy as the strength of the person can wield, than which, there can be no greater error—for all the advantage of weight can be gained, by using light ones, if the motions of the arms be quickened; and this need not be done, but as the person acquires strength. But

such as have the opportunity of attending the exercises of the Gymnasium," will have the use of these instruments as well as many other modes of exercise, properly pointed out, and their employment judiciously regulated.

CHAPTER XII.

OF BATHING, AND CLEANLINESS.

801. It is a popular belief, and one founded upon correct observation, that the proper and healthy condition of the perspiratory organ,—namely, the skin,—is highly important to health. Whenever this apparatus becomes deranged, either directly or indirectly, it is always found, that the body is less in the enjoyment of health and comfort, than when this is in the full exercise of its functions. It will, therefore, follow, that whatever tends to maintain the sensible and insensible perspiration in their proper proportions, will essentially serve the purposes of health. It has ever been acknowledged, that cleanliness is highly conducive to this desirable end; for, wherever this is neglected, disease is sure to follow—therefore, the impure state of the skin will sooner or later have its penalties.

802. The ancients were well acquainted with this fact; and so attentive were they to the removal of all casual impurities from the skin; so entirely convinced of the advantages resulting from it, that baths were erected and maintained, in many of their cities, at public expense; of which the inhabitants of the respective cities had a right to take advantage, at any time they pleased. These valuable gifts of public munificence, cannot well be too much praised, or admired, and could they have been perpetuated to the present moment, in all such climates where heat makes them desirable, incalculable advantages would have arisen, to reward the liberal spirit by which they were maintained.

803. Although there are no baths maintained at the public expense, in this country, we are, nevertheless, in possession of sufficient facilities for bathing, in almost every part of the United States, either by means of running water, or the late general in-

troduction of baths, in almost every well built modern house in our cities. Therefore, when this important auxiliary to health is not attended to, it must be attributed to reprehensible neglect.

804. Parents who are inattentive to the important duty of having their children well cleansed, by the frequent application of water to their skins, disregard one of the most valuable precepts which Hygeia can give, or that they can obey; and for the neglect of which, no adequate excuse can be urged, especially as the means are at the command of every body. In a climate like the one we are subject to, where the extremes of heat and cold are alternately experienced in their respective seasons, too much care cannot be taken to preserve the skin in its most healthy condition; especially during the summer months, that disease may not result. Therefore, the useful discipline of washing, (every young member, at least, of the family,) should never be omitted. If this were done daily, during the warmer parts of our seasons, it would be but complying with a necessity, constantly created, by the action of heat upon the skin; it should not be omitted beyond every other day, unless some circumstance of health might render it improper.

805. The object of all bathing, is to remove impurities arising from dust, perspiration, &c., from the surface, that the skin may not be obstructed in the performance of its proper offices. But it requires to be cautiously conducted, that the subject may not be exposed to the risk of taking cold—it should, also, be so managed, that too much reaction shall not be excited. To ensure these important ends, the bath should be of tepid warmth, at least for several of the first years of the child's life; for by having the water very moderately warm, we remove with more facility and certainty the impurities from the skin; we prevent taking cold, and do not excite too much reaction. Of the best mode of conducting the bathing, we shall speak by and by. (827, &c.)

806. We are aware, we are advancing opinions not in conformity with public prejudice; but we declare them without hesitation, as we are certain they are sanctioned by both reason and experience. The cold, is the favourite bath of people in general; but why it should be so, we are utterly at a loss to understand. This popular feeling originated in some unaccountable prejudice, or from an imposing, but limited experience.

But as it has taken possession of the public mind, it may be well to urge with all due candour, our objections to its employment.

807. 1. There are many latent predispositions to disease, or disease in an obscure form, to which the cold bath would be highly injurious, by calling into action the dormant affection, or by exalting the one already present. 2. There are many constitutions, wherein the powers of reaction are so feeble, that the body is left in a state of exhaustion for a long time, because reaction is tardy in taking place; and wherever this happens, the system is sure to be weakened, instead of being invigorated. 3. There are many, who have strong dispositions to local determinations of blood; as to the head, lungs, liver, &c.; in which cases, the cold bath is decidedly mischievous, by encouraging, or producing these determinations. 4. It has, sometimes, the most injurious effect upon the nervous system, producing a kind of syncope, or catalepsy. We know a lady who was nearly destroyed in this way, by a single plunge in the cold bath, although of moderate temperature—the warm, or tepid bath, she much enjoys. 5. The reaction, after cold bathing, is sometimes excessive, amounting, in some instances, to temporary fever; and when this subsides, the muscular system is found weakened. 6. It never answers the purposes of cleanliness so well as the tepid, or warm bath—therefore, one of the principal advantages for which it was resorted to, is defeated. 7. It is always commenced with strong repugnance on the part of the subject of it, whether it be a very young child, or a child of more advanced age—the first, manifests its aversion, by crying during the continuance of the discipline; the second, by strong opposition, crying, &c. 8. In very young children, it sometimes produces severe pain in the bowels, which can only be allayed by laudanum, as the following case, among others, will show:—

808. We were requested to prescribe for a child of six weeks old, who, from the moment it was stripped for dressing, began to cry, and would not cease, until it took laudanum, for the purpose of quieting it; and this was uniformly the case, from the first dressing after its birth. We inquired into the mode of washing and dressing it, and were informed, that the nurse had begun by washing it with *cold water*, and the practice had been continued ever since; and that as soon as the water was applied to

it, it would begin to scream; that after it had been well washed from head to foot with the water, it was again washed with cold whiskey, and then dried and dressed; that it remained cold and shivering for a long time after the washing; and that it continued unceasingly to cry, until quieted by laudanum, or carminative. We recommended, that it should be washed with warm water instead of cold, and to lay aside the use of the whiskey. On the repetition of our visit, a few days after, we were informed, that the child had been nearly quiet during the dressings, and only cried while that was carrying on, and ceased altogether to do so, as soon as this duty was performed; and that it had not required laudanum, since the warm water had been substituted for the cold.

809. In the case just related, it is evident, that the use of the cold water was injurious; it produced a painful condition of the bowels, which could only be relieved by anodyne medicines. The child, therefore, was not only made to suffer much pain by its use, but was acquiring a habit of taking laudanum, which could not fail to be ultimately injurious.

810. It must, however, be understood, that we are not condemning the cold bath, without reserve; on the contrary, we regard it as a highly important remedy, where the condition of the system indicates it; but we are decidedly of opinion, that the constant use of it, should be reserved almost exclusively for this purpose. The occasional use of the cold bath, to people in health, may safely be indulged in; but it should be sparingly had recourse to, unless employed as a remedy. We shall not here treat of the cold bath as a remedy—our present object is limited to the question, whether it, or the tepid bath, as a constant, daily application, be most conducive to the objects of health, and cleanliness.

811. We are, however, by no means sanguine, that we shall make many converts to the opinion we are advocating, as the prejudice in favour of the cold bath is inveterately fixed in the minds of most people. It is almost universally said to be “bracing,” and the warm or tepid bath to be relaxing; than which, nothing can be more unfounded; the cold bath, in many instances, such as those already enumerated, as well as some other, ceases to be bracing; while the warm, in those very instances, would decidedly have this effect.

812. But there is scarcely any thing more vague than the relative terms of hot and cold, as applied to the sensations created on the living body, by media of various temperatures. It will be proper, therefore, to signify by some definite sign, what is to be understood by the cold and warm baths.

813. By the cold bath we are to understand, water so reduced in temperature, that when applied to the human body, it shall produce that sensation of coldness, called a shock. Now, there are various conditions of the body, which will necessarily prevent any fixed degree, from producing this effect, unless we run into an extreme; we can, therefore, only assume some general positions: but we must always be understood to mean, the effect of such application upon the body when in health. It will be readily seen, that we can fix with certainty the lower extreme of temperature; since water will not bear a greater reduction than 32° of Fahrenheit, without freezing. The other is not so easily fixed, since it may vary from 62° to 82° , as we are informed that the Buxton water is at that temperature, and a slight shock is experienced upon immersion; the medium would, therefore, be 72° . Water, at this temperature, will feel cold to the body; and at 62° , it will be found pretty severe, especially in summer, if applied in the form of the shower-bath, though it is called temperate heat.

814. The warm, or tepid bath, may consist, then, of a temperature, under some circumstances, above 82° , or from this to 98° , the usual heat of the human body—beyond this, it becomes a “hot bath,” and should, like the cold bath, be employed but as a prescription of the physician; but we are not now considering this important auxiliary, except as a means to ensure cleanliness. Of this important part of physical education, too much cannot be said in commendation—it may truly be said to be a virtue.

815. No mother should confide this duty to a servant—she should herself daily inspect the skin of her children, and see that no part of it has been neglected. It is not sufficient for the purposes of health, or cleanliness, that the hands and face are washed—there are many other parts of the child’s body, which require a more rigid attention, and which, because out of sight, are too often neglected. Nothing, perhaps, in after life, so effectually administers to comfort, as the practice of habitual clean-

liness; it is also one of the most efficient means of preserving health. But this habit, (or we had like to have said, this virtuous feeling,) is rarely generated, if it have been neglected in early life.

816. An attention to cleanliness, costs neither time nor money beyond its worth; for the cleanly man, or woman, can make their toilette with as much despatch as the sloven, or the slattern; and they gain by it, that which the others can never experience—a feeling of inexpressible comfort.

817. As a preventive of disease, it stands foremost; for the origin of some of the most loathsome diseases, may be traced to a neglect of this virtue: it should, therefore, be practised, and inculcated, from the earliest infancy, to that period of life, at which the child is able to judge for itself; when, if it have been brought up with proper habits, it will spontaneously decide in favour of bathing. Let any one inspect the nurseries of children who are slovenly, and of those carefully brought up, and the very first glance will convince him of the advantage of the latter, and the mischievous tendency of the other.

818. Children may be so trained to cleanliness, that, at a very early period of their lives, they will avoid soiling themselves. A friend informed us, that the little patient of eight months old, for which we were prescribing, had not worn a diaper since it was a month old; nor had it in a single instance soiled itself, either during the day or the night. When it felt a necessity, it would by signs make it known in such good time as to prevent accident. This, we admit, to be a rare instance of discipline, but it is not the less worthy of imitation.

819. If this practice cannot always be attained, one of nearly as much consequence certainly can—namely, teaching the child, by frequently changing it, to feel uncomfortable when wet or soiled; and it will by its cries almost immediately make its condition known, and plead for relief. The above case, shows us how successfully this has been done; and we believe we may safely add, how easily it may be done, if properly commenced, and duly persevered in. For such is the effect of custom and good management, that children will very early declare their wants as regards their evacuations, if they be frequently placed upon the chairs, whenever they seem to manifest a desire to relieve themselves.

820. The example of other children, when there are such, will much contribute to establish this habit; if the older be placed upon the chair, the younger will soon be willing to follow their example—and thus regularity will certainly be produced. This practice may be subjected to certain periods, by placing the child upon the chair at certain hours; for instance, soon after they rise in the morning, towards noon, and in the evening. But in doing this, the child must not be neglected at the intermediate periods, if it discover any marks indicative of its wants.

821. Nothing, perhaps, will so decidedly prevent that disgusting and indomitable habit of “wetting the bed;” since nothing so certainly tends to produce it, as permitting children to remain long wet; as evacuation will follow evacuation, until the habit is confirmed, by all sense of inconvenience being lost.

822. It may be proper to say, *en passant*, that we do not confine the observance of cleanliness to the healthy condition of the body alone; for if the child be ill, frequent changes become even more necessary, though the popular opinion be against it.

823. We have already declared ourselves to be in favour of tepid water for washing children, from birth until they are at least two years old. If at this period a change be thought desirable, the water may be used a little colder; but it must be recollected that if a change be made, it should be done gradually, as we have just stated; so that the constitution may not be subjected to too sudden a trial, by a great difference in temperature. Extremes of every kind, we again repeat, are dangerous; therefore, the gradation should be from tepid to cool, and from cool to cold, if this last should ever become necessary, even as a remedy.

824. We would, however, caution the over-timid mother, not to mistake hot, for warm, and thus defeat every advantage which the rules we are inculcating are intended to confer. This error would be as bad as the other, for injury would certainly follow. So much does theory sway the actions of every one, that mankind frequently pursue opposite plans, to accomplish the same end. A delicate, frail constitution will be treated by contrary means, agreeably to the particular notions entertained by the person who has charge of the patient, respecting the cause of disease, or the effects of remedies. Thus, for the removal of debility, which

they suppose to be *the sole cause* of disease, the cold bath is prescribed by some, with a view, as they say, to brace the system; while others will employ the hot, that the feeble strength of the patient may be fostered.

825. In this case, either of the plans might be wrong, since each is an extreme; consequently, neither can be ultimately proper, except in a very few instances, and in no instance should we commence with either extreme. In all cases, the temperature of the water should be regulated by the degree of vital energy; for, though children of enfeebled constitutions are invigorated by a moderate bath where there is no contraindication to its use, yet they would be as certainly injured by the sudden application of the *cold bath*. So, on the other hand, a similar state of body may be cherished and improved by the tepid, yet might be severely injured by the *hot bath*.

826. But, as neither the *hot* nor the *cold bath*, should be used without the advice of a physician; they should always be considered as remedies of great power, and only to be used as such, and for the diseases for which they are proper. The indiscriminate use of both, has done more injury, we fear, than can be compensated for by the good derived from their proper application.

827. Dr. Struve lays down the following rules for bathing young children:—"During the first three months of its life, an infant ought to be bathed in moderately warm water;* the

* "The term moderately warm, implies that degree of heat, when the hand, or, if this be not sufficiently sensible, the foot, may remain in it for some time, without experiencing the least disagreeable sensation. The lukewarm bath, is about the temperature of warm milk. The cool bath signifies a temperature equal to that of water which has been kept in a room for a considerable time, so that its chillness is taken off. And the cold bath ought to correspond with river water, in the height of summer." (p. 353.)

It will readily be perceived, that Dr. Struve's definitions of temperatures, are extremely vague, since he does not measure them by the thermometer. Willich, his translator, has succeeded in being explicit, by saying, "Immediately after the birth of a child, the water in which it is bathed, ought never to exceed the 98th degree of Fahrenheit's thermometer. By progressively reducing the warmth one degree every month, it will stand at 86° when the child is a year old, which, I presume, will produce the sensation of what Dr. Struve calls *lukewarm*.—if this temperature be still farther reduced in the next twelve months, so that the mercury in the glass falls to 74°, when the child has completed the second year of its life, it may then with propriety be termed a *cool bath*." (p. 354.)

next nine months, the water should be only lukewarm; after the first year, its temperature may be still more reduced; and after the second, the bath should be cool. From the third year of its age, we may venture to bathe a child in cold water; but it should always be remembered, I do not mean as cold as ice.”*

828. There can be nothing more preposterous, or injurious, than the empirical use of the hot, or cold bath, since they are confessedly powerful agents; but warm, tepid, or cool water, for the purposes of cleanliness, may be daily used, under proper restrictions, not only with safety, but advantage.

829. We say, under proper restrictions: by this, we mean—1st, that the child, when about to be washed, should be exposed no longer than is absolutely necessary for the operation; 2dly, when the cleansing is done, it should immediately be well dried, and its clothes restored as quickly as possible; 3dly, in cold weather, the water should be rather warmer than in hot weather; 4thly, a little fine soap should always be used, by previously dissolving a small portion in the water before it is employed, especially for the lower half of the body; 5thly, the head, particularly if the child be very young, should be first washed, dried, and its cap put on, before the other portions of the body are wetted; 6thly, children should never be dressed in a current of air; 7thly, they should never be roused from their sleep for this purpose, nor washed immediately after waking; but they may safely be permitted to sleep, after the fatigue of dressing.

830. When the conveniences present themselves, children of both sexes should be permitted, under proper regulations of decency, to bathe in running streams, ponds of pure water, or rivers, during the warm weather of summer. But this should always be done under the superintendence of adults qualified to protect them against accident. They may thus be instructed in that most useful exercise, and art, swimming, of which no boy, (and why may we not add, girl?) should be ignorant after their ninth year. It is an important part of education, that youth be taught to swim; and we regret, that hitherto, no proper establishment of this kind has arisen among us. The one purporting to be for this purpose, has too many serious objections against it, to receive general patronage. In the first place, it is not conducted with

* Treatise, p. 353.

sufficient decency; secondly, it is badly situated for the purpose; and thirdly, it is much too expensive.

831. We have employed the words bathing, and washing, synonymously, in our present chapter. We think it necessary to explain this; as in no instance have we wished to be understood submersion, by the term bathing, and when we have spoken of washing, it always had reference to the whole body undergoing this discipline, in distinction to the partial cleansing of the hands and face.

CHAPTER XIII.

OF DRESS.

832. We have already spoken of dress, when applied to children of the first period—that is, from birth to weaning. We shall now say a few words upon this important point, from that time to the age of puberty.

833. The object of all dress should be, first, to cover the body in such a manner that decency shall not be violated; and, secondly, to protect the body against the vicissitudes of the seasons.

834. The first object may be easily obtained; and this by the most simple means—to accomplish which, it is only necessary to cover the body with a loose garment, of sufficient length and width. But this simple plan is rarely adopted; as caprice and fashion, pride and ostentation, are constantly interfering with it;—hence, the immense variety of dress observed in the different portions of the globe, as well as in contiguous places. Where a departure from the simplicity just spoken of, does not injure by imposing restraint upon either the limbs or body, it is not a legitimate object for animadversion; since causes beyond our control will constantly be operating, to produce great variety in the form of dress.

835. The mischievous and proposterous custom of swaddling, is nearly abolished, in almost every part of the world: the child, from its birth, being now permitted more freedom for its limbs, which it exercises, accordingly, with much advantage to itself.

But in fulfilling the second object, namely, a protection against the weather, many errors are committed—first, in the form of the garments, and, secondly, in the quantity and quality of them.

SECT. I.—*The Form of the Garments.*

836. To a certain period, say until the fourth or fifth year, it is usual to habit both the male and female child, pretty much after the same manner; and, luckily, when this plan was adopted, the dress of the male was made to conform to that of the female—we say luckily, for so it truly was; since the dress of the latter, in modern days, is much better calculated for both health and comfort, than that of the former. The loose style of dress now adopted for children, if persevered in, will certainly be of much consequence to the rising generation, since it imposes no restraint either upon the extremities or the abdomen. The stiff stays for female, and the tight waistbands of breeches for male, children, formerly in use, have now yielded to the unconfined frock, and petticoats in the one, and the modern invention of trousers and suspenders in the other. By these changes, a greater security is afforded for the preservation of health, since neither the chest nor abdomen in girls, nor the abdomen and lower extremities in boys, suffer from compression.

837. We have already adverted to the evils which may arise from too great a pressure upon the abdomen, when speaking of the bellyband of infants; and it may now be proper to observe, that our observations upon this point are not confined to that period of life—they extend, properly speaking, to every period; and will apply with much force to the stage of life we are now considering. Indeed, we might say, with *more* force, since, joined to the pressure so earnestly deprecated, we must add, the almost incessant muscular exertion to which children yield themselves at this particular time, by which the liability to rupture must be increased; and especially, at this time, the parts give way with proportionable facility.

838. We, therefore, consider the loose dress now in use for females, and the almost universal recourse to trousers and suspenders, for boys, as contributing much to their general health, beside very much diminishing the risk of the accident, at which

we just hinted. On these accounts, we would earnestly recommend it to every mother, so to dress her children, as shall prevent every possible risk of too strong a pressure upon the parts designated.

SECT. II.—*The Quantity, and Quality of Clothing.*

839. The errors committed on both these points, are not less frequent, than obvious; they consist chiefly in extremes; theory in most instances directs both; and too often in direct violation of reason and experience. One extreme here alluded to, is advocated by a class, who suppose that the body can scarcely be covered too thinly, for the purposes of giving strength to the constitution; hence, let the inclemency of the weather be what it may, they banish nearly all the warmer articles of clothing, with the view of inuring the body to any temperature to which it may be exposed. The other class consists of those who apprehend cold to be the most destructive agent that the human body has to contend against; hence, whenever their pupils are exposed to an out-door atmosphere of reduced temperature, care is taken to protect them against the mischievous tendencies which their apprehensions have conjured up, by every adventitious means that wool and fur can supply. Both these plans must, necessarily, have their victims; and it is, perhaps, a moot point, which of the two is the most destructive. We have already dwelt upon this subject, on another occasion; and what we have said there, will strictly apply here.

840. Our mutable climate, or rather our climate, which at one season has the heat of the tropics, and in the other the cold of the frozen north, requires corresponding changes in clothing, at those different periods. In summer, our feelings oblige us to reject all superfluous covering; and, in winter, they make us covet the warmest garments—there is but little risk, in general, in obeying the first impulse; but the second, may be carried to an extreme, especially in the early part of life.

841. Exercise, which is so much desired by youth, and which is generally so advantageous, will render less warm clothing, even during our coldest periods, sufficient; hence, those who are habitually exposed to the weather, but at the same time sufficiently well protected, will require either fewer garments, or of less

warm materials, than those who are almost constantly confined to the house, either from necessity or choice: nor will the former be so liable to injuries from the vicissitudes of the weather.

842. This fact is notorious to the observation of every body; yet so unnecessarily apprehensive are some, that they oblige their children to clothe themselves as warmly, when they are in the full exercise of their limbs at their various sports or avocations, as if they were about to perform a journey in a slow-motioned stage-coach or wagon. The consequences of this over-clothing, under such circumstances, are, croup, pleurisy, or catarrhal fever, from a suddenly checked perspiration, which had most unnecessarily been excited by a superfluous quantity of clothes. We have already remarked upon the other extreme.

843. Too strictly guarding the neck and throat of boys, should be particularly avoided; for, from the proximity to the seat of circulation, they very quickly have their heat unduly increased by an over quantity of covering; to relieve which, the articles surrounding them are suddenly removed, perspiration becomes checked, and disease, of course, follows. Therefore, these parts should be but moderately clothed, that the consequences just spoken of may not follow.

844. Custom, among females, has almost deprived them of any protection to these parts, or even to their chests. This exposure to an inclement atmosphere, is decidedly wrong; and but too often lays the foundation of consumption, or other affections of the chest.(459) We are, however, not to be understood as advising any unnecessary covering; we would only wish to suggest, that when they are exposed to the weather, a greater protection should be afforded to these parts, than if they were within doors.

845. The head should not be too warmly clad, of either a boy or girl, especially those who are in the habit of exercising much in the open air—nature intended that the hair should serve for its protection, particularly within doors. Therefore, children should not be permitted to wear their hats or bonnets in the house, as there the hair is an all-sufficient covering. In the extreme cold of winter, the ears of such as are exposed to the wind frequently suffer severely—to prevent this, a small piece of fur may be adjusted to the hat, so as to cover these parts; or a fur cap may be indulged in, but let it be forbidden to be worn in the house.

846. But in no one particular are the sticklers for the hardening system more in error, than when they reject stockings in cold weather, and even in winter. We cannot refrain from expressing our surprise, that this absurd and cruel practice could ever obtain, since there are no portions of the body more liable to suffer than the feet and legs, and few that have a larger circle of sympathies connected with them. We, therefore, constantly recommend, that these parts should be kept covered by a sufficient protection by stockings and shoes. We say that a *sufficient protection* should be given to these parts; for we are aware, that, like the coverings for other parts of the body, it may be overdone. In winter, the shoes can scarcely be too stout; not by their thickness to increase warmth, but to protect the feet against wet. The stocking may be of worsted; but these should not be too thick. If the stockings be too thick, they excite too much perspiration, and the consequence is, cold feet.

847. We have already remarked upon the propriety of keeping young children sufficiently warm in every respect; and of the necessity of accommodating their clothing to the vicissitudes of the weather; but we do not wish to be understood, that this system should be extended in all its details to children of greater age—that is, to children of the period of which we are now treating; for, after the fifth year, it is well to inure them to the changes of an external atmosphere, by often repeated, but not too long continued exposures. A person of but common observation, who has an interest in the child, will easily perceive when the cold becomes severe, by its complainings, as well as by its appearance—when this happens, the child should be immediately removed to a milder, but not suddenly to a heated atmosphere. In these little, but important trials, the child should never remain passive for any length of time—if not of itself disposed, it should be induced by various little stratagems, which every good nurse is acquainted with, to put its little body in motion, that the circulation may be equally maintained; but if it cannot be excited to activity, let it be taken into the house.

PART III.

CHAPTER I.

OBSERVANCES, FROM SECOND DENTITION TO PUBERTY.

848. IT is impossible to treat this part of our subject, without constant reference to certain directions which have already been given, for the promotion of the general well being of the child. Up to the period, therefore, now about to be considered, we are supposed to have directed the best physical treatment in our power; that is, we have endeavoured to avail ourselves of the experience of others, as well as of our own, to give the best possible chance of a healthy, regular development of the system, by urging such observances and directions, as have been found best calculated for this important purpose.

849. We shall not, therefore, repeat in detail, the directions for eating, drinking, sleeping, exercise, &c.; but merely state, that, as the body is still in a state of gradual development, as much care is necessary at this period, for the continuance of the system already commenced, as was in the earlier parts of life. Indeed, it may be said with much propriety, that as the individual is now left more to his own guidance from his increase of years, it behooves him, by cautious conduct, that he defeat not the good already received from the government of watchful parents, and thus irretrievably destroys his health. Boys, at this period of life, are necessarily less under the eye of the parent than girls; consequently, more vigilance is required with regard to them. To render, therefore, any directions efficient, such a habit of obedience must have been created by previous moral discipline, as will render the will or commands of the parent availing; or all that has been before done, will be lost.

850. Should children, from heedlessness, or perverseness at this period of life, fail to continue the plan previously adopted for their benefit, they will be sure either to call into action some latent predisposition, if such exist, or lay the foundation for future ill health; as this period, like that of dentition, is marked by peculiar susceptibilities, and is thus rendered more obnoxious to disease. We shall, therefore, say a few words upon the leading points of physical education, that we may not be misunderstood in respect to that we would wish to enforce; and,

851. 1. *Of Eating*.—If the physical treatment have been previously well begun, it will be found, at this time, that the appetite, and digestion, will be in just proportion; for the body has now acquired more vigour; and the play of the muscular system is more confirmed, and better balanced; consequently, the stomach will have an increase of power, and will perform its offices with as much facility as success, provided it be not overtaxed by the quantity of food, or that this be not of an improper quality. But, unfortunately for this period of life, children, as we have already observed, are less under the eye of the parent, and are but too apt to abuse this organ, either from a certain craving for improper articles, or a recklessness of consequences, however affectionately forewarned—hence, but too often, a foundation is now laid for future disease of the stomach. Sometimes, indeed, parents themselves are not sufficiently upon their guard; they permit, but too often, the full indulgence of the appetite, from a persuasion, or rather from an unfounded hypothesis, that “children never eat more than is good for them.”

852. This unqualified assertion is contradicted by daily experience; and, therefore, deserves the serious consideration of parents. They should learn to distinguish between the demands of a natural and healthy appetite, and the cravings of habit; or they will discover, too late, that the powers of the long-suffering stomach are destroyed, never again to be restored. There is no point of treatment more easily complied with than this, provided the parent, or a judicious and faithful servant, take charge of the child during its meals, and become the judge of both quantity and quality. We shall, therefore, lay down the following rules for eating:—

853. (a) Children should never be suffered to eat alone, unless the proper quantity of food be apportioned to them.

854. (*b*) If a child demand more than is judged proper for it, resist, at once, its importunities with firmness, or you will but too certainly make a glutton.

855. (*c*) As every extraordinary article becomes a new incentive to appetite, as little variety as possible should be set before children.

856. (*d*) Children should never be indulged with a second course; since, if they set down with an appetite, they will generally satisfy it, by eating freely of the first article presented to them; consequently, all the rest is superfluous, and, therefore, injurious. If the appetite be small, the less they eat at that moment the better; as, by taking but little, the appetite will be sure to return at the next meal. But, should this instinct of nature for an observance of moderation be neglected, or be attempted to be overcome by variety, repletion, with all its evils, will follow; therefore, instead of a renewed, and healthy appetite following, as it would necessarily have done, had the instinct been obeyed, it will be found diminished; and, most probably, attended with headach, oppression, or even vomiting.

857. (*e*) The food for children, at this period, should be of the most simple, and digestible kind. The breakfast should be of milk with bread, mush, rice, &c.; or, of very weak tea, with much milk, bread and butter, and a soft boiled egg. The dinner may consist of plain boiled or roasted beef, mutton, chicken, &c., or the soup of either, divested of fat. The vegetable, (for there should never be more than one at a time,) may be the Irish potato, rice, hommony, Lima beans, or beets. This plain food will be every way sufficient for all useful purposes:—more than this will be excess, and should, therefore, be prohibited. The supper should be similar to the breakfast.

858. (*f*) Children should never be indulged with pastry of any kind—they may, occasionally, take a little of the cooked fruit of a pie, but even this should be used moderately.

859. (*g*) Children should not be indulged with bread, bread and butter, &c., between meals, however hungry they may seem to be: for this will either destroy the regular appetite at dinner, or they will eat too much. In the first case, the stomach will be interrupted in the regular routine of its functions; consequently, the appetite will become either irregular or whimsical; both of

which must be avoided: in the second case, all the evils consequent upon an over-distended stomach must follow.

860. (*h*) Children should never be permitted to exercise violently immediately after dinner; therefore, this meal should be presented to them soon after school hours; and they should be made to remain passive; or, at least, all severe exercise should be forbidden, until they return to their school.

861. (*i*) Children should be taught the importance of eating slowly, and chewing their food well—on this account, a habit of resting after eating should be early established, that they need not swallow their meals hastily to return to play; or, in other words, this should never be permitted.

862. (*k*) Children of the age of which we are speaking, may occasionally be indulged in small quantities of almost any of our fruits, provided they be perfectly ripe.* The most proper time for this, is when the stomach is in full possession of its powers, or an hour before dinner. The reason for the selection of this time, is obvious; the stomach is now empty, or nearly so, and the gastric juice is in considerable quantity; for we have already observed, that fruit is not very easily assimilated.

863. (*l*) Children should not be suffered to carry food in their pockets, to eat between meals, or during school hours; as the bad habit of requiring food at improper times is produced, and the digestion of the previous meal is interfered with, by a fresh quantity being thrust into the stomach, before it has properly digested that which had before been received.

* Children at the period of life just named, are more frequently, and seriously injured by eating unripe fruit, than is generally imagined. There is, to a child's stomach, an irresistible charm in fruit of every description; and they will but too often procure it, *coute qui coute*. Having no guide but their inclination, they will eat of it even to surfeit, if able to procure it. Parental admonition would effect much on this important point, were it enforced by command, or even strengthened by example; but, unfortunately, too many parents are either indifferent to what their children eat, or think it right they "should be able to eat of any thing." It is in vain, then, to rely upon parental authority to remedy this evil: we must look to the civil power, for its cure; and it is truly an object worthy of their most serious deliberation, to remove, by a law regularly and severely enforced, all the unripe trash, which so abundantly fills our market. Every kind of fruit offered for sale, should be rigidly inspected; and if it be found immature, it should not only be forfeited, but the vender severely fined—this would effect much more good than the seizure of a pound of butter, because it lacks half an ounce of the standard weight.

864. (*m*) Children should get their breakfast as soon after they have properly washed, and combed themselves, as may be—as their stomachs are now empty, and plentifully supplied with gastric liquor; if left too long without food, the cravings become either too importunate, or the appetite fails—either of which would be injurious.

865. 2. *Drinking*.—There is but one drink really proper for children; namely, water. In this they may be as freely indulged as the necessities of the stomach may require; but they ought not to be permitted upon every pretence to drink between meals, lest a disagreeable and mischievous habit be generated, and the stomach made to suffer. During meals, or soon after, they may drink water to advantage; but to encourage the habit of drinking between every mouthful they swallow, is bad. The stomach become unnecessarily distended by quantity, and distressed by weight; and the digestive menstruum impaired in power, by over-dilution; consequently, the process of assimilation will be imperfectly performed.

866. 3. *Sleeping*.—This all-important restorative, should be regulated with the utmost care. Its periods should be disturbed as seldom as possible; and the child should be permitted to enjoy its full proportion, and this without interruption, if possible. Some children require more sleep than others; it is, therefore, a useful study to ascertain, the proper quantity each individual should employ. To determine this, we must be attentive to the habits of every child; and that one, which expends, by any means whatever, the most strength during the day, requires most sleep during the night to restore the lost quantity. We may, therefore, lay down the following rules for sleeping.

867. (*a*) Every child should go early to bed, that the due quantity of sleep may be certainly procured—by early we mean immediately after candle light in summer, and not later than eight or nine in winter; for a child not exceeding seven; and a little later for one more advanced.*

* It would be difficult to fix, by hours, the precise time a child should sleep, as it must, in some measure, depend upon constitution, as well as upon exercise and mental exertion. In general, we may say, that a child of seven years old might safely indulge in nine hours of sleep; and, from that period to manhood, eight hours may be safely allowed.

868. (*b*) Sleep should be so regulated as not to interfere too much with the hours after daylight—therefore, the old saw of “early to bed, and early to rise,” &c., is one of great moral meaning, and of great practical usefulness.*

869. (*c*) Children should not, however, be put to bed immediately after a full meal—it would be proper, if any thing has prevented its taking supper at the regular and proper time, that the sleeping hour be a little retarded.

870. (*d*) Children should never be unnecessarily or suddenly awakened, lest their nervous system be thrown into disorder by the alarm.

871. (*e*) Children should be early accustomed to sleep in the dark, both from a moral and physical propriety—they should not fear the dark; nor should their sleep be interrupted, by the presence of light.

872. (*f*) Children should not be permitted to indulge in bed long after daylight; as its warmth, the accumulation of urine and fæces, and the exercise of the imagination, but too often lead to the precocious development of the sexual instinct.

873. Sleep is not only useful in restoring lost energy; it is also, highly important to growth. It is a well established fact, that there is a considerable difference in the stature, especially of young people, between the morning and evening. This arises from the superincumbent weight producing an approximation of the vertebræ; consequently, an opportunity should be given to them to expand again, which they will do by their own elasticity, as soon as they have the opportunity, by the weight of the body being taken off by a recumbent posture.

874. 4. *Exercise*.—In proportion as the child advances in age, will be his desire for employment; hence, the multiplication of his amusements. Every proper opportunity, therefore, should be given, for the due exercise of both body and mind; but neither should be too much fatigued. Care should be taken, at this period, to provide such employment or amusement, as shall exercise the arms as well as the limbs; of this kind is battledore or

* Children should not be played with after they are in bed; sleep, like every other function of the body, has its periods: should this be incautiously interrupted, the child may remain wakeful during the whole night, and be thus unfitted to rise in proper time in the morning.

shuttlecock, playing at ball, pitching of quoits, &c., for the period is now fast advancing for the completion of the human body; and its proper development very much depends upon uniform exercise. Therefore, all such employments as but partially employ the muscular system, should be changed, for those which will call in requisition every part of the frame.

875. After selecting proper games and exercises for children, constant care should be taken, that none are indulged in to excess; for, the most innocent and amusing, if carried too far, may become a source of extensive mischief; therefore, amusements of every kind may be converted into evils. But let us not deny ourselves the advantages of such employments, because they may be abused. Let us only be judicious in choice, and set proper bounds to indulgence, and there is little to fear from the exercises of youth.

876. Again, in choosing amusements, let them be well adapted to the individual for whose benefit they are intended—thus, every boy cannot become a good fencer, a good dancer, a good runner, and a good leaper; yet he may excel in some one of these amusements. His disposition, and skill for any particular species of amusement should be studied; and he should only be kept at such, as will give him a chance of not falling below mediocrity. If this be not attended to, he may become listless, and supine; and receive injury from that, which was well calculated for his benefit, by his self-love being mortified, by the superior skill and address of his companions.

877. All hazardous experiments of skill, or strength, should be peremptorily forbidden—all attempts at posture making, are highly dangerous, and should not be reckoned among the proper exercises of youth. Every violent exertion must, necessarily, be attended by a proportional strain upon some one part or other of the body; therefore, it should be instantly discountenanced; such as jumping from great heights, leaping over elevations, lifting great weights, &c.; for, in every exertion of this kind, the most serious risks are run, of producing a disability for life. It is by these hazardous experiments, that “ruptures” are so frequently produced.

878. We should, nevertheless, be careful, that we do not produce timidity by the too indiscriminate reprehension of amusements, which may be abused; children should be permitted to leap,

climb, or run, to a certain extent; but only where, under ordinary circumstances, no danger, can arise. At the same time, they should be made acquainted with the mischief which may follow any of these amusements, when carried to excess, or when improperly performed. They should be early made sensible, that lifting weights beyond their strength, throwing the body violently, and extensively backward, leaping over high places, or jumping down very low ones, &c., may in a moment produce a "rupture," and disqualify them through life for any active employment. On this account, the exercises of a well regulated gymnasium become so valuable, as the performances are graduated; beginning with the most easy, and progressively arriving at the more difficult.

879. Very often, at this period of life, strong dispositions are discovered for mechanical employments: whenever these are of a decisive character, they should be encouraged; for, though the individual may never follow the art his early predilection led him to select, yet, the dexterity acquired in his early years, may essentially serve him in some future business of life; thus, a surgeon has been often benefited, by his knowledge of the mode of handling tools, &c. Therefore, a boy may often safely and profitably be indulged in the use of sharp tools, though it may occasion an anxious mother many heart-aches, during his initiation into the mode of employing them.

880. One general, and we might say essential rule, should ever govern youth in their sports and amusements; which is, never to engage in such as shall require much exertion, after a full meal, as the worst consequences may result from the neglect of this caution.

881. It will be perceived, that the great object of all physical education is, the regular and healthy development of every part of the body, in its proper order and proportion. When this succeeds, the period of puberty advances in regular and unembarrassed order; and the intentions of nature are fulfilled without disturbance, or disease. The changes in both sexes, intended to mark this important period, take place in regular succession; and when accomplished, mark a new era in human life. And most happy should that individual be, who arrives at this period without accident, and proves the changes to be complete.

882. Much care is required, at this all-important time, that

neither accident nor design, shall interrupt the regular march of changes, which precede and announce the completion of the human fabric to be at hand. It is a period replete with moral and physical difficulties; and much prudence, and good sense are required on the part of parents and guardians, that they may be both successfully surmounted. It does not enter into our scheme, to treat this subject either anatomically, by tracing the alterations of structure in the parts mediately or immediately concerned; or medically, by pointing out the diseases and their cure, to which they may be liable.

883. Though it does not enter into our scheme to treat of the moral discipline of youth, yet we may be permitted to observe, that much injury is done to them, especially in the very early period of their existence, by attempts at precocious development of the mental powers, by overtaxing the brain, by presenting to it tasks, fitted only for riper years. This injurious exercise of the mental powers, originates in either a mistaken theory, or in a vanity, on the part of the parent, that cannot be too severely reprehended.

884. We once saw a child of twenty months old, completely master of the alphabet—it was a female, and began to talk very early; its mother by a perseverance and industry worthy of a better object, commenced her task of teaching as soon as the child could speak; and, before it was twenty months old, it knew every letter of the alphabet so well, as not to be puzzled by any stratagem instituted to mislead it. She died a *prodigy*, at three years old, of hydrocephalus internus, or dropsy of the brain. This victim of maternal pride, was constantly exhibited to every visiter, and made to give proof of its precocious attainments, until its little brain could no longer resist the repeated shocks it was forced to bear, for the gratification of the mistaken mother's vanity, or to give evidence of its intellectual powers.

885. To this, we may add another error into which parents permit their children to indulge at a very early period of life, and which, with certainty, lays the foundation of many gastric as well as cerebral affections—namely, the use of tobacco in some way or other. On this subject, we cannot resist the temptation to copy Dr. Palmer's eloquent denunciation against the use of cigars.

886. "The young man, who, unjustified by the plea of ill

health, or unsanctioned by the prescription of his physician, has acquired the habit of smoking a pipe or cigar, may assuredly congratulate himself on having reached the second stage of his progress, from temperance to dissipation—from elasticity of spirit and vigour of frame, to premature imbecility and decay. As the reckless poacher is led gradually on, from his work of midnight depredation in the woods, to more daring acts of violence and rapine; so will the youthful smoker be too often insensibly allured from a wanton indulgence in the cigar to the sins of intoxication, and the ultimate sacrifice of his health, his character, and prospects. Let parents, then, as they appreciate the responsibility which devolves upon them, solemnly protest against, and resist the first encroachment of this pernicious habit in their family. Let females, whose influence is commonly as beneficent as irresistible, exert their powers in decrying the noxious practice, and averting from those in whose reputation and welfare they are so deeply interested, the moral pestilence. If the leaders of fashion in the land are resolutely bent on destroying the little remnant of energy and character which they still possess, let them pursue their ignoble propensities, and achieve the work of moral ruin, as they are wont to dissipate their fortunes in private. Society will be disposed to contemplate with singular philosophy and forgiveness, any act of moral suicide which these ‘Spoilers of the human hive,’ may be tempted to commit. But let them not contaminate with noxious exhalations, the public atmosphere; nor the minds of the thoughtless and inexperienced, who are, too frequently, by the vulgar ambition of aping fashionable follies, with their yet more pestilent example.”—*Illustrations of Medicine*, p. 145.

OF THE

DISEASES OF CHILDREN.



PREFACE.

THE diseases of childhood have not, until lately, sufficiently engaged the attention of physicians, though they have strongly claimed it. It would be difficult to explain satisfactorily, the causes of this indifference; it may, however, we believe, chiefly be ascribed to the following facts: 1st. To the practice of midwifery being confined almost exclusively to women, until within the last fifty or sixty years; by which the physician was thus prevented from seeing many of the diseases of children. 2dly, In Great Britain, especially, to a by-law of the Royal College of Physicians, "by which its fellows are compelled to exclude themselves from practising midwifery," thereby operating like the first cause. 3dly, To a belief that the diseases of childhood are obscure, or even unintelligible. 4thly, To parents supposing that nurses and old women are more conversant with these diseases than the most enlightened physician; by which they are deprived of the opportunity of studying them with as much diligence and accuracy, as they deserve.

But, fortunately for this class of sufferers, an almost entire change has been effected within the years just stated, by the practice of midwifery becoming almost entirely confided to the physician; by the public mind inclining to the belief that the diseases of infancy may be understood, by due attention and study; and, also, that there is rather more safety in the prescriptions of the physician, than in those of the nurse.

In consequence of this alteration in public sentiment, the care of the diseases of childhood, has been committed to the physician; who now has the opportunity of watching them through all their changes, from the moment of birth, to the period of puberty. Hence, we have, within the last few years, some valuable treatises upon this subject; so many, indeed, that it may appear, to

some as to lead to the conclusion, that the subject is exhausted. Under this impression, the present undertaking may be thought to be unnecessary, or, at least, to require apology.

In our defence, therefore, we shall merely observe, that the science of medicine must necessarily be a progressive one; and that its advancement must mainly depend upon the improvements its respective followers may make, in the exercise of its various departments; consequently, each one is bound to contribute his mite towards the general benefit. But, as the improvements of any individual in the treatment of one or more of the complaints of childhood, would scarcely justify the writing of a volume to announce them; as they are, for the most part, diffused through the journals of the day; it follows, it must become the office of some one, to collect and embody them, that they may not be lost, and, by such loss, society sustain an injury.

This office has been undertaken by us; but with what success must be determined by others. We hope we are not indulging an overweening vanity, when we say, we feel ourselves, to a certain extent, qualified for this duty; since more than forty years of our life have been spent in the contemplation of diseases; and those of childhood have claimed a large share of our attention during that period.

We may urge another inducement to this undertaking; namely, that, hitherto, no one on this side the Atlantic has thought proper to give to the public at one view the American practice in the diseases of children. This supineness of our physicians, is no less surprising than reprehensible; especially as many are so well qualified by their talents and experience for the task; and, moreover, as such strong inducement is constantly held out, by the peculiar character of our diseases; and, in many instances, by the novelty and boldness of the mode of treatment.

Hitherto, we have almost exclusively depended upon European publications for information upon almost every subject connected with medical science; and we acknowledge we have received much advantage from them; especially from their elementary works: but it must not be disguised, that the same advantage has not been derived from all their practical works. This has not arisen from a deficiency of either opportunity or of talent; for we confess both, in many instances, to have been great; but to the want of proper adaptation of their remedies to the state,

force, and peculiarity of our diseases. For it cannot escape the observation of any intelligent practitioner who may have visited both countries, how essentially our diseases are modified by climate, soil, manners, and habits; and that these modifications require corresponding changes of treatment.

Most of the diseases of this country, have a peculiarity of character; an intensity of force; and a rapidity of march, altogether unknown to European climates; and, were reliance to be placed upon the feeble practice of that portion of the globe, however well suited to the state of its diseases, we should but too often have the mortification to see our patients hurried to an untimely tomb.

The diseases of childhood in this country, like those of adult age, require to be met with promptitude, and with adequate means: a temporizing treatment suits not their character, and if adopted is almost sure to end in defeat.*

Besides, the catalogue of diseases of children by European writers, has, in our opinion, been too much extended; at least for this country. Many of the diseases enumerated by Underwood, who is certainly one of the best writers upon this subject, are entirely unknown here; the study of them, therefore, becomes unnecessary, if not mischievous; since, from the enumeration of some general symptoms, one disease may be mistaken for another; or, from an overweening desire of accuracy, and classification, confusion may be produced; or distinctions without differences may be made. This is particularly the case, with the diseases of the skin.

In our account of the diseases of childhood, we have endeavoured to separate the accidental from the characteristic, or permanent symptoms; and have only detailed such, as are known to accompany the disease in this country. This determination has almost necessarily confined us, to the history and treatment of such diseases only as exist in this country; and especially to those in this part of our continent. Therefore, the history of the diseases to which children in Philadelphia and its neighbourhood are liable, will be, we are of opinion, a pretty faithful account of almost all in this country; since the heat of our summers will have nearly as de-

* This declaration applies rather to the necessity of early attention to the diseases of our climate, than to any great difference in the nature of the therapeutical means.

cided an influence upon their constitutions, as the sun of the Carolinas or Georgia; while the cold of our winters, will produce consequences analogous to those of more northern latitudes.

At all events, very little mischief can arise from this mode of treating our subject; and none, which cannot be immediately repaired by any well instructed practitioner; for it will entirely consist in the proper adaptation of the remedy, to the force of the disease, taking it for granted, he understand its character; and in this country this is generally so uniform, as not to make him liable to much error.

Indeed, we may safely add, that the general simplicity of the diseases of children, renders their management more easy, as well as more certain than those of adults; their complaints are almost always acute, and of the *sthenic* kind; hence, the necessity and success of evacuations, in almost all of them.

We are fully aware, that the opinion just advanced, is not the popular belief; particularly in Europe; and especially since the promulgation of the doctrines of the ingenious, but ill-fated Brown. He taught, and it is but too generally believed, that their diseases were almost always *asthenic*, and, of course, bore evacuations ill. There is, perhaps, no one error, in medical science greater, or more mischievous, than this;—to it must be attributed, mainly, the general want of success in the complaints of childhood; and the frequent difficulties the physician has to encounter in his treatment of them, from the interposition of such parents and friends, as may have imbibed the same prejudices.

The experience of every day would prove, how well children support long-continued evacuations, did we not turn our eyes from the useful lesson—who has not witnessed the long continuance of diarrhea, without producing even weakness, much less death? And who has not seen a profuse salivation, of even months' continuance, during the agony of teething, without even robbing the little sufferers' cheeks of their bloom? Would this obtain with the adult? No! He would, perhaps, die by the first; and certainly emaciate by the second.

We are well aware of the importance of the views now under consideration; we shall, therefore, advance nothing in support of them, that does not appear corroborated by our own experience. For to us there are no positions in medicine more clear,

than that there are few of the diseases of childhood which will not yield to well directed evacuations; and, that when not thus treated, they become not only obstinate, but often formidable. We are also equally persuaded, that could this view of the character of the diseases of children gain the ascendancy in the minds of parents, much less difficulty would be experienced in the treatment of them, and, consequently, fewer would be called to an untimely grave.

It is well known to almost every parent, that danger may await the sudden stoppage of a diarrhea, or incipient dysentery, by the use of astringents; and many have had reason to remember, with much sadness of heart, the improper drying up of the discharge from excoriated ears, especially during dentition; yet in each of these instances, did we yield to the popular belief, that nearly all the diseases of childhood are of the asthenic kind, the early exhibition of laudanum, or some other astringent, would be proper in the first, and some drying application necessary in the second.

Besides, it has been but too generally believed that the disorders of the internal organs of children have no distinctive signs, by which we can determine, or fix, either the particular part attacked, or the precise nature of the affection. From this we must dissent; for we are of opinion, that we can by a careful examination of symptoms determine the seat of the complaint; and by the particular state of the pulse, at least determine its general character; that is, whether it be a disease of too much, or too little action; and this is the main point of investigation; for it at once enables us to adapt the remedies to the general state of the diathesis. For it must be recollected, that there is so little difference in the general treatment of the inflammations of the liver, lungs, stomach, bowels, windpipe, brain, &c., that little or no embarrassment can be created, should any uncertainty exist, as to the particular viscera that may be affected.

And it must also be recollected, that every important viscus of the body in a state of disease, has its corresponding marks and sympathies, by which a careful observer may certainly detect the organ to which it belongs. We grant, that much experience, and careful observation are required to determine this; as well as to become familiar with the diseases of children, and to prescribe for them with facility and certainly; but this is attain-

able by well-disciplined bed-side observation, and a correct habit of thinking.

The belief that the diseases of children almost constantly present nothing but perplexing obscurity or embarrassing uncertainty, has much retarded the progress of inquiry, by engendering doubts of their susceptibility of successful investigation, lucid explanation, or useful arrangement, and of course, that every prescribed remedy has but an uncertain aim; and, consequently, a contingent, or doubtful effect. We are far from entertaining such opinions; and we are most anxious, so far as our feeble efforts may have power, to banish them from the minds; not only of the medical practitioner, but from all who may entertain them—for they are unworthy of the one, and painful to the other.

The scepticism of which we are now speaking, has almost become a popular belief; to the serious injury of the class of sufferers about whom we are so deeply interested—it has made many a parent resort to the prescriptions of an old woman, rather than to the advice of the regular practitioner, from a persuasion, her remedies are the safer because apparently the more simple; thus losing precious time or submitting to improper treatment.

Loss of time, is often of the greatest possible consequence; since it permits a disease of a dangerous character, to take an insidious, and but too often, a fatal hold, before the danger is suspected, or the proper remedy applied—this loss of time may consist in a reliance upon an inefficient, or, perhaps, an improper remedy, or in the total neglect of any remedy whatever. We need only mention the overlooking of hoarseness in the early stage of croup, or the neglect of the proper remedy in dysentery. (See Chapter on Croup.)

How many parents have had reason to repent of the neglect of a slight hoarseness, of perhaps even several days' continuance, which terminated in a few hours after it had fully developed its character, in death; and how many, who, perhaps, in some measure aware of its tendency, had relied upon a feeble administration of antimonial wine, or a little of the expressed juice of the onion, when nothing but the prompt application of active remedies, could, even in its commencement, have subdued the disease.

We have divested our language of as much *technicality* as

would be consistent with a work strictly medical: and we have attempted to treat our subjects in as familiar a manner as we are capable, without descending to a "Domestic Medicine." We have also given a translation of our prescriptions, and added a glossary of the medical terms; that those who cannot procure medical advice, may derive some advantage from them. But let us be clearly understood to discountance, if not absolutely to forbid, any interference with the province of the physician, where his services can be commanded; for we declare it, as our deliberate opinion, that much danger may arise from the neglect of it.

"Ni Sutor ultra crepidam,"

is an adage of much pith, as well as of great practical value.

THE DISEASES OF CHILDREN.

BOOK II.

GENERAL OBSERVATIONS.

883. CHILDREN may be diseased, and even be near death, while in utero; but over such affections we have no control. It is, therefore, no way surprising that we should find them occasionally emaciated, feeble, nearly, and sometimes quite exhausted, at the moment of birth. The diseases of children then may, with much propriety, be said to commence, even before birth; though no remedy can be employed for their relief, until after that event has taken place.

884. In treating, therefore, of the diseases of children, it is proper to commence our account with the affections which may declare themselves immediately after they are presented to the world; and these will consist in either the entire absence of respiration, or its imperfect establishment.

CHAPTER I.

OF THE ABSENCE OF RESPIRATION, &c.

885. WE are of opinion with Mr. White, Dr. Denman, Baudelocque, &c., that tying of the cord prematurely is very often, if not always injurious to the child—therefore, it is laid down as a rule, and which, we believe, can never with entire safety be departed from, namely, that “the cord is not to be tied until the pulsations in the umbilical arteries have ceased.” Mr. White, we believe, first drew the attention of accoucheurs to this

point; and he has almost universally established an acquiescence in the importance of the rule: so general has it become at present, that if it were not recommended by any late writer, it would be looked upon as an important omission. His opinion on this subject, is founded upon the most correct physiological views; and he must be considered as having contributed much to the benefit of society, by the promulgation of a little essay “On the Management of Children at the time of birth.”

886. In favour of the practice here recommended there is so much concurrent testimony, that we have viewed with regret, the scepticism of Mr. Burns upon this point. He tells us,* that when the child is vigorous, and cries lustily, there is no occasion of delaying, (the tying of the cord,) so long;” and adds, “nor have I ever known any bad effects result from this practice.” And before, in his text, he declares,—“If it cry, or breathe vigorously, then it may be safely separated from its mother.” These observations go certainly to call in question the propriety or necessity of the rule, so well established by the experience and reasoning of Mr. White, as well as of almost every other practitioner.

887. It is true that Mr. Burns almost in the same breath, declares, “when the cord pulsates at the time of birth, we are never to be rash in dividing it. It is of importance to keep up the foetal circulation, till the new mode of acting can be established, and we ought not to divide the cord completely in such cases, till pulsation stop.”†

888. Now, both of these directions cannot be right; on which shall the young practitioner rely? The propriety of Mr. White’s rule, we think, should never have been questioned—for until it be proved an error, it is surely acting on the right side to adopt it; for it is not sufficient, to prove it one, that Mr. Burns declares, he never knew any bad effect to result from the practice of applying the ligature while the arteries were yet pulsating. The evils arising from this practice are not always so immediate, as to make us challenge it for their cause; and the subsequent ones, may be too remote, however certain, to be considered as cause and effect.

889. The author of the little tract alluded to above, tells us, and tells us we think truly, that “the pulsation of the arteries of

* Principles, Vol. II. p. 9, James’s ed.

† Ibid. Vol. II. p. 11.

the cord proves the existence of the fœtal life.* The existence of the fœtal life proves the imperfection of the animal life. While the animal life is imperfect, the fœtal life ought not to be destroyed. The naval string, therefore, should never be divided or tied, where there is any pulsation in its arteries."

890. Mr. Burns denies the validity of this reasoning, by saying, "It has been supposed, that as long as pulsation continued, the function of respiration was imperfect; but it is not so; the pulsation depends more on the continuance of the vitality or action of the placenta, than on the state of the lungs." This cannot be: the pulsation of the arteries of the cord, must necessarily depend upon those of the heart of the child. This is sufficiently proved by observing the mode in which pulsation stops in the cord. The cessation commences next to the placenta itself, and gradually proceeds to the umbilicus of the child—this is invariable: now, we would ask, what agency can the placenta have in perpetuating the pulsations in the cord, since they are always found first to cease next to this mass? We grant the agency of the placenta in maintaining the fœtal circulation—but this ceases to be a complete operation, before the pulsations in the cord cease; for these are maintained by the heart alone, and they would continue this action, did we prevent the return of blood to the child by opening the umbilical vein, or putting a ligature on it, until its system would be drained of almost every drop.† But we must not be understood as maintaining, that the pulsation of the cord depends upon the lungs—for we know, that when they become perfectly pervious to the blood by the new circulation being established, that they have a contrary effect—or rather, that the umbilical arteries must cease to beat from a necessity imposed, by this new condition of the lungs and circulation. We must, therefore, hold it important, that the cord be not tied until the pulsation of its arteries ceases.

891. We have reason to believe we have seen several instances of death, and this of a painful and protracted kind, from the premature application of the ligature. And that this is probably one of the causes of the many deaths, in the hands of ig-

* The author calls the life of a child in utero, the fœtal life; and the life consequent upon respiration, animal life.

† We suppose, in these cases, that the placenta preserves its attachment with the uterus, and that the circulation is going on, as before delivery.

norant midwives and practitioners, we have too much reason to suppose. The constant practice of such pretenders is, to apply a ligature to the cord the instant the child is born; and this without regard to its pulsation, or state of the respiration.

892. Beyond all doubt, the first great object after the delivery of the child, is the establishment of its respiration: for the most part, this takes place the instant it is in the world; and, indeed, it very often cries, and even forcibly, as soon as the head is protruded through the external parts. But should it fail to do this, every attention should be immediately paid, that respiration be established.

The child may be born in one of the following conditions: 1. Feeble; but not exhausted by either delay in its delivery, the compression of the cord, or from a delicate stamina: these several conditions may be attended by a pulsating cord; or one in which pulsation has ceased.

893. The cases in which the cord still pulsates, there is but little risk, as long as this action continues; and for the most part, all that is necessary, is, to remove all impediments from the mouth which interrupt the passage of air to the lungs, and by dashing upon its body some cold spirits or brandy: this almost instantly makes it send forth cries. But should there be no pulsation in the cord, the child's body flaccid, and especially, if upon dividing the funis but a drop or two of black blood issue from the cut, the case is desperate, but not absolutely hopeless.

894. We should in this case, 1st, carefully remove any mucus that may be in the mouth, fauces, or trachea, by wiping them carefully as far as we can reach with the little finger armed with a piece of fine dry rag; 2dly, by inflating the lungs, by holding its nostrils, and applying our mouth to that of the child, and forcibly expanding its lungs, and then expelling the air from them by a gentle, but pretty firm pressure upon the thorax;* 3dly, by placing the child's mouth downwards, and holding the body and

* Mr. Burns recommends, "the cartilages of the trachea to be pressed gently back to obstruct the œsophagus." (Vol. II. p. 11.) But this is never necessary if the head of the child be made to rest upon the right hand, and thrown a little backward; for in this position the skin on the fore part of the neck is put a little upon the stretch, and made to press against these cartilages, and carries them back sufficiently—the fingers of the left hand close the nostrils, while the mouth of the operator is applied to that of the child. In this case, the feet of the child should be towards the right hand.

hips higher than the head, at the same time gently shaking the child, that it may disengage any mucus that may be lodged in the trachea, and permitting it to flow out of the mouth, by making this the depending part—then cautiously wiping the mouth as just directed, renew the inflations and the suspensions alternately, until the mucus is discharged from the mouth: by proceeding in this manner, we have often had the satisfaction of seeing the child restored. It is a circumstance worthy of remark, that, sometimes, owing to the tenacity of the fluid within the wind-pipe, we cannot, at first, force air into the lungs; but, by a little perseverance, we overcome this obstacle, and the mucus sometimes becomes so thinned, as to flow readily from the mouth, and at once relieve the child. This operation should never be neglected; nor should it be too soon given up; especially if we can excite a few pulsations in the heart, or in the cord: these parts should be carefully examined, after each inflation: the pulsation of the heart, when very feeble, is best detected by placing the ear immediately over its region—that of the chord, by pressing it between the thumb and finger, close to the umbilicus. 4thly, By the application of dry warmth, by means of heated cloths, frequently renewed: this precaution should be immediately had recourse to, and should be persevered in until the last moment. We much prefer dry warmth as an application to the child's body, to the warm bath, which is so much relied on in such cases—we think we have seen the latter decidedly injurious, though we do not pretend to explain the reason.* Might not a properly constructed syringe be highly useful in removing the obstructing mucus?

895. When the child shows signs of returning life, it is generally by a deep short sob, which may be repeated at longer, or shorter intervals; but, when we think the interval too long, we should renew the inflations, &c. Should respiration be but imperfectly restored, we must carefully guard against fatiguing the child; therefore, it should not, on any consideration, be disturbed by dressing it; on the contrary, it should be carefully placed in such a situation, as to permit the frequent renewal of warm applications, which are of primary consequence to it. We have more

* Does the warm bath invite too much blood to the capillaries of the surface, and thus deprive the more general circulation of a quantity, that may be essential to the proper performance of this office?

than once had the mortification to find all our endeavours frustrated, by an inattention to our directions upon this point, though given impressively.

896. 2. The child may be born healthy and strong, the funis pulsating briskly, yet may not cry; because, a mechanical obstruction from mucus prevents the ingress of air into the lungs. This mucus may be in the mouth or posterior fauces, or, it may be in the trachea—if the first, we may entirely remove it by a piece of fine rag upon the little finger, as just suggested; (894) if in the second, by suspending the child, as already directed, which will seldom fail to give relief, by the mucus being discharged by running from the mouth. We do not recollect an instance, where it was necessary to have recourse to inflation, while the pulsation of the cord continued: but, when it stops before respiration is established, recourse must be had to it. When the child has made attempts to cry, we may often succeed in giving full force to it by dashing spirits or brandy upon its body.

897. 3. The child, from long delay in the passage, or having its neck tightly begirt with the cord, may be born, *still*—in this case, its face is livid, or even black, and swollen; the arteries may have ceased to beat, or may beat pretty vigorously. In such cases, nothing can save the child from immediate death, but instantly abstracting blood, by cutting the cord. Should the pulsation have ceased, we may sometimes still succeed in drawing some blood, by forcing it from the cord with the fingers; and then employing inflations, &c. If pulsation continue, we must abstract blood by also cutting the cord. The quantity to be drawn must be regulated pretty much by the effect. When respiration is established, we need draw no more; but until we see some signs of this about to take place, we may abstract pretty freely, as this process, most probably, is interrupted by the congestive state of the brain, which can only be removed by ample depletion.

898. This practice of bleeding from the funis, in our hands, has always answered a valuable purpose, in this congestive state of the brain; and to such cases it should always be confined. Baudelocque recommends this plan; and we can bear witness, in many cases, to its entire success; for we have repeatedly seen respiration established by this remedy, and by this alone.

899. Mr. White informs us, however, that he has “repeatedly tried this method, and the *almost* uniform consequence has been the death of the child.” We believe the cases which proved unfortunate in the hands of Mr. W., to have been ill-selected, or of so desperate a kind, that no remedy could have saved them—for it does not follow, because the child has been born still, after “a very hard and tedious labour,” that it is a case for depletion. And we have farther reason to believe his unfortunate cases to have been ill-selected, by his confession, that bleeding did not always fail. *The livid and swollen condition of the face*, must be present, to authorize the use of this remedy—if they be not, we would not feel ourselves justified in abstracting blood. Mr. Burns, with a view to get blood, recommends cutting one of the umbilical arteries with a lancet or scissors—but we believe, dividing the cord to be the better plan.

900. It will be always proper, before the cord is divided, to pass a ligature loosely around it, that it may be tied the moment we have abstracted a sufficient quantity of blood. We should be provided with a diaper, or a white cloth of any kind, to receive the blood as it flows from the divided vessels, that we may have some means of determining the quantity abstracted.

901. When respiration has been but feebly, or imperfectly performed, we think we have seen good derived from a few drops of warm wine whey. This may be repeated every half hour, until it shall be no longer necessary, either by the child breathing freely, or by its death.

902. Mr. Burns thinks with Dr. Underwood, that, if electricity could be employed, it might be useful. Of this we can say nothing from our experience; yet it would seem to bid fair to be beneficial, if it were used with the address so powerful a stimulant would require. As a dernier resource, we would not hesitate to try it, were we in possession of the proper means for its application. And the case stated by Dr. Underwood, of the recovery of a child apparently dead for two hours, by electricity, should awaken attention to this subject.

903. We have rather dwelt upon this subject, because we feel it to be one of much interest—for every one is not in possession of the best method of treating still-born, or nearly exhausted children, yet its importance will be obvious, upon a moment's reflection. How often does the life of the child depend upon

the prompt application of the proper remedies! Yet how few, out of the profession, are qualified to give it, though the knowledge of what is proper upon such occasions is so easily attained! Every mother of a family should be acquainted with the proper method of treating children upon such emergencies, since she may be so situated as to direct them, either in her own case, or in that of a friend.

904. We will illustrate this, by relating a case which fell under our notice in the year 1798. Mrs. ——— was suddenly surprised by labour, in the middle of the night. Her husband was despatched with all imaginable haste for us; while the lady was attended to by her sister. The labour advanced so rapidly, that the child was born before we arrived; and when we handled it, it was found to be perfectly dead. We, nevertheless, used all our endeavours to restore it; but they were in vain. We found, upon inquiry, that its death was altogether accidental; and its life might have been saved, had its relation but suspended it by the heels, and well cleared its mouth of the mucus which obstructed the passage of air to the lungs.

CHAPTER II.

OF SYNCOPE, OR FAINTING.

905. Under this head we may class the condition of some new-born children immediately after birth, as well as the syncope, properly so called, which sometimes supervenes several days after this period.

906. In the first case, the child seems exhausted altogether of muscular power; is pale, motionless, and flaccid; it gives no other evidence of life than feeble pulsation of the heart and the umbilical arteries; respiration is retarded, and, perhaps, would never be established, were the child left to itself.

907. This condition may arise from the imperfect development of the child itself; though it may be considered as having tarried within the uterus its full time; or it may have been cast off prematurely. In both these cases, the chance of recovery is small;

since the want of development is a serious obstacle to recovery, yet it is not altogether hopeless.

908. The first object to be attempted in such cases, is the expansion of the lungs—this must be tried by dashing cold brandy upon the body; maintaining warmth, by means of heated cloths; and preserving the funis entire, so long as pulsation continues. If we succeed in producing respiration, the child should be so placed, that it may derive advantage from the repeated application of dry heat; it must be neither washed nor dressed; and its feeble powers must be sustained by the most unremitting application of warmth externally, and by the administration of a few drops of wine and water, or wine whey, from time to time, internally. If it cannot swallow, its lips and nostrils may be every now and then moistened with a little wine, or brandy and water.

909. However unpromising appearances may be in the commencement of this case, we are justified in saying, that we have frequently been rewarded with success, by following the plan just laid down; it, therefore, always deserves a trial. Should this case be mistaken for one in which the brain is in a congested state, and treated by blood-letting, it will surely prove fatal; and some of the instances, in which the author of the little tract just named tried this remedy, and where the children died, were probably of this description.

910. Children, who arrive at their full period, will, of course, *cæteris paribus*, stand a better chance than those who are born prematurely; but the latter should never be abandoned, because the powers of life are feeble; especially, if they have attained their seventh month. We have witnessed two instances of complete recovery, where, from all the data we could collect, the children had but just exceeded the sixth month. These were neither washed nor dressed for many days; but they were preserved in a uniform temperature by means of a stove, and a bed of cotton. A few drops of warm whey, from time to time, was all the food they received for three weeks; but on which they throve surprisingly.

911. One of these children was carefully weighed when it had attained its sixth week; its clothing, diaper, &c., and its little self, weighed *one pound and three quarters*. The other was not weighed, from a superstitious feeling upon the subject; it

lived but three months—its death was occasioned by a catarrhal fever, contracted from improper exposure. The former is living at this moment, and is now a mother of two children. She is still small.

912. There can be no question but the two children just mentioned were preserved, by not subjecting them to the fatigue of washing and dressing. They were more than a month old, before they were exposed to these ordeals.

913. Children, who have undergone their full uterine development, and who would have possessed good stamina, had no accident unfriendly to their lives accompanied the labour, may, from the nature of such accidents, be liable to this state of exhaustion. Thus, whatever diminishes the proper quantity of blood circulating in their systems, will produce this state of weakness—as a separation of a portion of the placenta before birth; the placenta being too long, and too powerfully compressed by the tonic contraction of the uterus itself; by the cord being slightly compressed, when prolapsed, or when it interposes itself between the pelvis and the presenting part, &c.; hence, the frequency of this state, when the causes just named are known to exist.

914. These cases, if well managed, will very often terminate favourably. All fatigue must be avoided, and all purgative medicine be withheld. We have never ventured, under such circumstances, to purge off the meconium, until the child appeared to gain sufficient strength to bear the operation without risk, even though this required a number of days; for we believe that this substance may occasionally be serviceable in such cases, by keeping up the stimulus of distention. We may at least venture to declare, we have seen the child exhausted in a few hours, when several loose stools have followed each other in quick succession.

915. A child so circumstanced, should not even be put to the breast until its system has become more confirmed, by rest; and judiciously administered nourishment. The milk of the mother should be given it by the spoon, and this without removing the child from its place of rest; or should the mother have no milk, a little rennet whey may be substituted; or, if something a little more cordial be thought expedient, weak white wine whey may be given.

916. It now and then happens, that a child may be rather feeble when first born, but recover its powers by proper attention, and every thing giving promise of doing well—when it suddenly becomes pale, flaccid, cold, with a long interval between each breathing, and at last respiration appears to stop; the fingers and hands become blue, or black; the lips livid, and the eyes fixed, and but half closed; the pulse extinct—in a word, looking “the image of death.” After remaining in this condition for a short time, a slight convulsive motion will appear to play about the mouth, an imperfect inspiration will be taken, followed by an expiration, attended by a peculiar noise; the lips become less livid; as do the hands and nails; the eyes move languidly, and the pulse may now, by close attention, be perceived, like a vibrating thread, at the wrist; an attempt to cry is made, but the sound is so feeble, that it can be heard only at a very short distance—and this finishes the paroxysm.

917. After the “fit,” as it is called, has terminated, the child will appear languid, and uneasy, for some time; it will generally swallow if any fluid be presented to it, provided it be not too soon after the paroxysm. A discharge from the bowels almost always takes place during the “fit,” of a small quantity of a very green fluid. These spells are repeated at longer or shorter intervals, unless the disease be arrested by the influence of remedies, or death closes the scene.

918. A case of this kind occurred to us, which we will proceed to relate; and the mode of treatment will at the same time be made known.

919. Mrs. F. was delivered, on the 13th of March, 1825, of a small, but apparently a healthy child; she supposed she had not arrived, by two weeks, at her full period. The child cried distinctly, but not very forcibly. It was at the usual time washed and dressed, and took without difficulty a little warm molasses and water. The next day, it appeared to be doing very well; its bowels were opened freely, and it sucked when put to the breast. It continued to do as well as children in general, for several days, (until the tenth,) when it seemed more languid than usual, and did not take its nourishment so freely, nor draw so firmly at the breast; but as it had had several watery green stools during the night, its languor was attributed to this cause. The condition of the bowels was but little regarded; as the nurse supposed

the discharges were not so frequent, as to require any medicine. In this situation things remained until the following day, when the child, after having repeatedly during the morning refused nourishment, "fainted," as the nurse called it, and I was immediately sent for.

920. When I arrived, the child was in a state of faint, or syncope—so completely, however, did it resemble one dead, that I thought it was actually so, and expressed a fear to that effect. The nurse said, No—it was not dead; it had only fainted, as it had done several times before. I placed my ear over the region of the heart, but could hear no pulsation.

921. I caused flannels to be wrung out of quite warm whiskey, and applied all over its little body; small sinapisms were placed upon the temples; a drop of brandy was insinuated into its mouth, and its nostrils were wetted with a little sharp vinegar. After these applications were made, which must certainly, I think, have occupied five minutes, the little creature began to discover signs of returning animation; contrary, I confess, to my calculation. The return, as it were, to life, was pretty much in the order stated above; the child, however, was found very much exhausted, and it was some time before it could swallow.

922. The bowel complaint was now increased greatly, and the poor child nearly exhausted. It had no return of syncope while I staid, which was about an hour; yet it could hardly be said to be alive. I directed the whiskey stoups to be continued; and a weak chalk mixture with a little laudanum, was ordered to be given every hour, or until the condition of the bowels should be improved. A little wine whey, with an equal quantity of cinnamon tea, were directed to be given as often as the child could swallow them.

923. I repeated my visit in the evening. The child had had during my absence one "fainting fit," but it did not last so long as the former; its bowels were still much disturbed, and the child looked more like a corse than a living being. I desired all the previous remedies to be punctually continued. My next visit was not until early the next morning. The child had had several slight "faintings;" its general appearance I thought more favourable; it swallowed with considerable freedom; its bowels were much improved; it could cry audibly, and looked about with some vivacity. During the whole of this period, its

little eyes swam in a yellowish fluid, of considerable tenacity and quantity—indeed, the quantity was so great, as to flow down its cheeks; and so tenacious, as to be traced through its whole course, by the coat which it left upon the skin.

924. I desired a perseverance in the plan mentioned. From this time, it began to recover, and mended rapidly, without any return of the faintings. It is now alive, and doing well.

925. Dr. Underwood recommends, upon similar occasions, a more stimulating plan, upon the authority of Mr. Hey, of Leeds; such as the volatile tincture of Valerian; and upon his own, the fumes of lighted tobacco forced into the child's mouth. I can say nothing as regards the efficacy of either of these plans, from any trials of my own. It certainly comes recommended by high authority, and should therefore be deserving of confidence. I however confess, that I entertain some apprehensions of the tobacco fumes, from its known narcotic powers—but I will not oppose speculation to experience. During the severe part of the above child's illness, I did not permit it to be dressed—on the contrary, it was kept naked, for the better employment of the warm whiskey.

CHAPTER III.

OF THE MECONIUM.

926. We have, in the first part of this work, (Book I. p. 153,) already spoken of the substance called meconium, and of the propriety, or necessity of purging it off. We shall not repeat what we have already said upon this subject; but we may add what we did not urge at that time. Since writing what is here referred to, a case has occurred, which most decidedly proves the necessity, if farther argument were wanting, of carefully and completely carrying off this offensive recement.

927. A child born healthy, had its bowels liberally purged, as it was supposed, by the ordinary remedies. It remained perfectly well for several days, and had taken the breast freely.

At about the eighth day, the eyes and skin appeared rather yellow, though its urine was not altered in colour. Its bowels were a little affected, and had frequent, but very sparing watery stools; it hiccoughed often; its skin was dry and hot; it became very restless, and refused the breast, though evidently very thirsty, as it would receive with greediness, water, or any other thin fluid, from a spoon. It would often start, and at such times would move its limbs violently for half a minute together. Its tongue was very white, and loaded with a substance resembling a stratum of coagulated milk. It did not vomit, though evidently distressed at stomach, as it would frequently gag, but could get nothing up.

928. Believing its distress to arise from some irritating cause in the first passages, we ordered a tea-spoonful of warmed castor oil; and this to be repeated in two hours, if the first did not succeed. A second, and a third, were given, without moving the bowels. Magnesia, in five grain doses, followed by a tea-spoonful or two of lemonade, were then given. It took a scruple of this medicine, with no better effect. Its stomach now began to revolt at every thing that could be offered it; and the purgative medicines were in consequence suspended. The abdomen began to swell, and became very tense and shining. It could lie but on its back, with its little legs drawn close up to the belly, and was evidently in a state of great suffering. Its cries were piteous and incessant; and its whole skin became bedewed with a cold sweat.

929. Injections of various kinds were thrown up the rectum; the child was placed in the warm bath; but no stools were procured, for the little tinged mucus which came away every now and then, by severe straining, did not amount to a stool. We had upon several late occasions with children, found a solution of the carbonate of soda, very useful in aiding the operation of medicine, in cases of constipation; we, accordingly, determined to administer a grain of this article in a tea-spoonful of lukewarm water, every fifteen minutes, until ten grains should be taken.

930. At the expiration of two hours and a half, the bowels began to move; and in the course of three or four hours, there were ten evacuations, each of which evidently contained a quantity of the meconium, with the exception of the two first. The

purging was now kept up by an additional tea-spoonful of castor oil, and was permitted to go on, until the meconium was no longer visible in the evacuations. Dr. Underwood gives a similar history; but one, in which a much larger quantity of medicine was exhibited.

931. We have related this case with several views:—1st, to prove the necessity of purging off the meconium; 2dly, to show that this substance, when not completely carried off, will most probably create a good deal of distress, or even severe disease; 3dly, that though the meconium may disappear from the early evacuations of the child, it is no proof that there is none remaining; 4thly, that while it has possession of the bowels, it prevents, by its tenacity, the usual action of purgative medicines; 5thly, that by the exhibition of the soda, some change was effected in the bowels, favourable to the operation of the remedies previously exhibited.

CHAPTER IV.

OF JAUNDICE.

932. The skins of newly born children are frequently of a yellow colour; but this does not constitute the disease in question. The yellowness here spoken of is not of a deep tone, though very generally diffused. This appearance may continue for several days, and then disappear without the aid of remedy, or without leaving any evil behind. It is difficult to say to what this yellow tinge may be owing: certain it is, it is not attributable to the presence of bile; since neither the urine, nor the whites of the eyes, assume the yellow hue.

933. We know that changes from a white to a yellow skin, take place upon certain occasions, and this sometimes with surprising rapidity, by some occult change in the cellular membrane or rete mucosum, without our being able to declare the cause. This is remarkably the case in yellow fever; where the presence of bile cannot be detected in the circulating fluids. The same thing takes place with certain people, from strong af-

fections of the mind, peculiar derangement of the stomach, or from the bite of certain reptiles, without the aid of bile: it also occurs, occasionally, with the new-born child.

934. Therefore, every yellowness of skin must not be mistaken for jaundice, as it would lead to great errors in practice. Our attention is frequently drawn to this appearance by nurses; and when it is observed, we make it a rule to investigate the condition of the child, lest a real jaundice be present.

935. We direct our attention, 1st, to the whites of the eyes, and the secretion of tears: if neither of these be tinged yellow, we have reason to believe there is no jaundice; but if they be, we inquire, 2dly, into the appearances of the urine and fæces. If the first be yellow, we suppose it a still stronger ground of belief, that there is jaundice; and if the fæces be paler than they should be, or of a clay colour, we are sure the child has a genuine jaundice.

936. We have, however, known all the marks, or signs of jaundice to exist, (with the exception of the pale or clay-coloured stools,) without the child appearing to suffer in the least. They have all disappeared spontaneously, or by the exhibition of a single dose of castor oil, without being followed by the slightest inconvenience. As long, then, as the stools are dark green, or yellow, we need not give ourselves any anxiety about the yellowness.

237. But if, on the contrary, the above marks be attended by deficiency of colour in the stools; if the bowels be costive or irritated to frequent efforts; if the abdomen swell, and become tense; if the child be uneasy, fretful, and inclined to vomit; if it really vomit a white glairy mucus; if it refuse the breast, and frequently moan, as if in pain; if it hiccough, and emaciate rapidly, if its eyelids become glued together by a yellow tenacious serum, jaundice, in its most formidable form, is present.

938. In cases of this kind, the liver itself has sometimes been found much diseased, as in the case related by Mr. Pearson; (Underwood, p. 14,) in other instances, the common duct has been obstructed, as in the jaundice of adults.

939. Dr. Underwood, (p. 13,) says, "I have found suckling in that state, (with jaundice,) is capable of communicating the true jaundice to a great degree, and that it will not be cured, but by the recovery of the suckling mother or nurse, or the nurse

changed, or the infant being weaned, as well as properly treated.” We think the Doctor must labour under an error in this statement. We have no difficulty in believing, that the serum of the child’s blood may become tinged with bile, since the milk it sucks is coloured by it—consequently, the chyle also will be coloured; hence, some of the common marks of jaundice will be present—that is, the whites of the eyes, the skin, and the urine, will partake of the same general hue with the serum of the blood, but the essential mark of jaundice, we are sure, will be wanting; namely, the light or clay-coloured stools, or the absence of bile in them. It would be extremely difficult to conceive how the tinged milk of the mother should either materially injure the liver, or obstruct the common duct: and, unless one or the other have happened, we believe a genuine jaundice cannot be produced.

940. Nor is there any difficulty in accounting for the yellow appearances of the child, or that it shall not get well, (that is, lose its yellow appearances,) until the mother or nurse is cured, and the child is weaned, since it is constantly receiving the same coloured milk.

941. When a genuine jaundice attacks a new-born child, it is but too often fatal, with whatever propriety or energy we may attempt to relieve it. It is generally recommended to commence the cure by an emetic: for this we have the authority of Armstrong, Underwood, Burns, &c.: to oppose our single experience against them, might appear ill-judged, if not rash. Yet we dare not run counter to our own observations; especially, as we have given fair trials, (in our own estimation,) to the remedy, and the result is decidedly against the practice.

942. Emetics have not only failed in our hands to remove the disease, but have rendered the stomach so irritable, as not to receive any other remedy willingly. We have, therefore, abandoned them for some years, and find we can succeed better by another plan of treatment.

943. When we find symptoms of jaundice, that is, yellow skin, eyes, and urine, we begin by giving small doses of castor oil; that is, a small tea-spoonful every two hours, until it purges freely. If, upon the inspection of the evacuations, we do not find bile in them, we follow up the purging the next day, by giving calomel in very small doses, until a cathartic effect be produced. This may, and does require, sometimes, two or three days’ perseve-

rance in the calomel, aided by small doses of soda, supersaturated by carbonic acid gas, before the bowels are moved; for it must be recollected they are most commonly very torpid. We have said we give calomel in very small doses; the following is our formula:—

R. Calom. ppt. gr. iij.
Sacch. alb. gr. vj.
M. bene, div. in. xij.

944. One of these to be given every two hours, until they operate. They are best exhibited in a small drop of thin molasses, washed down by the solution of soda, in the proportion of two scruples to eight ounces of the carbonated water.

945. A tea-spoonful of the solution of soda may be given frequently as a drink. Should the calomel, at any time after exhibition, procure bilious evacuations, it should be desisted from, or given less frequently. But, should it not, it must be persevered in, unless the bowels become too much irritated: in this case, they must be appeased by laudanum, in quarter drop doses, every two or three hours, until the effect be produced. During this period, however, the solution of soda should be continued. We have thought that advantage has been derived, by bathing the abdomen with warm brandy, especially if this part be preternaturally hot or cold. In doing this, however, a caution must be suggested, that the parts be not unduly pressed, or rudely handled, under the impression that this is essential to its efficacy.

946. Should diarrhea, with bilious-looking stools, supervene, the calomel must be stopped, and laudanum must be given, as directed above. During the whole of this time, the child should receive its mother's milk as often as it well can, by sucking, if able; or by the spoon, the milk having been previously milked out.

947. We have thought also, that the occasional employment of the warm bath has been useful, especially, when there is a disposition to spasm, or frequent hiccough.

948. But, notwithstanding the employment of the above remedies, if the stools do not become bilious; if the tone of yellow in the skin be increased, or rather looking black; if the skin become mottled; the eyes blood shot; the urine very scanty, and very high-coloured; or if entirely suppressed; the hands and nails looking livid; if the child vomit, or be threatened with

convulsions, the case must be considered as extremely desperate, though not absolutely fatal, as we once witnessed a case, where all these symptoms were combined, yet the child recovered.

949. In the case just alluded to, we used, not knowing what else to do, but almost solely with a view to relieve the anxiety of the parents, a warm bath every two hours, for five minutes at a time, in which an ounce of the sweet spirit of nitre was mixed. After its first application, the child appeared revived; and each subsequent one was followed by improvement—bilious evacuations took place; there was a liberal secretion of urine, and the child mended from that moment with astonishing rapidity—we do not, however, wish to attach much consequence to this first trial—it was, perhaps, mere coincidence. It may, however, deserve farther trial:—we have not ourselves had an opportunity to repeat it since.

CHAPTER V.

OF ERYSIPELAS.

950. Children in the month are sometimes liable to inflammation of the skin of the erysipelatous kind, which locates itself variously. It is not, however, a very common affection, especially among the higher classes of society. It is a disease of more frequent occurrence, it would seem, in Europe, and especially, in the lying-in hospitals, than in this country.

951. When this complaint is a symptom of some prevailing endemic of crowded hospitals, it is considered by both the French and English writers, as one of great danger. Dr. Underwood says he has not met with this disease often, except in lying-in hospitals. Its ordinary time of attack, is a few days after birth; and was thought, by some, never to appear later than the month—but he says this is not the case; and this agrees with our own observations.

952. We have seen this certainly later than the third month; and in one instance, and that one of a most ferocious kind, the child was beyond the sixth month. It would seem that no part

of the body is exempt from an attack of this inflammation; at least, we have seen it commence upon various portions of it. In the instance just alluded to, it might be said to have had no "local habitation;" for we saw it occupy a leg, a thigh, an arm, the face, or the body, in the course of twenty-four hours.

953. Its translations were rapid, beyond belief; and the part occupied at one moment, would in another, be left free from disease; while a new portion of the body, uncertain which, would be obliged to sustain its attack; in its turn, in the course of two or three hours, might be left with equal capriciousness to fix upon some new part, without the one just left having received any material injury. The inflammation, in this instance, did not vesicate until it had fixed permanently upon the head and face; which it did, after having pursued this erratic course for five days. After the head and face became affected, the disease seemed to forget its fugitive course, but not its deadly character. The face and head became immensely swollen; the surface attacked became purple, and vesicated over its whole extent; delirium followed, and death soon closed the scene.

954. The places most commonly selected for this inflammation, agreeably to our experience, are the nates, the neck, the small of the back,* and face. It usually begins by a spot of uncertain size, and ill-defined extent. Fever is almost sure to attend;† and the child to betray great marks of suffering. The extent of the inflammation may be very limited for several hours, or even days, unless it vesicate early; when this happens, the disease spreads with much greater rapidity, and the child suddenly becomes dangerous. The stages of this inflammation are sometimes passed, with great rapidity; a bloody ill-looking pus, or ichor, is quickly formed, which very soon extends itself through the meshes of the cellular membrane, to an undefined distance.

* I have had a case lately in which this affection, the third day after delivery, attacked the whole of the upper portion of the back—that is, from the occipital bone, to a little below the points of the scapula. There was much hardness, redness, and swelling of this part—it was relieved by the mercurial ointment altogether; no other application having been made. It required four weeks to confirm the cure.

† It seems very certain that this disease is both idiopathic, and symptomatic—therefore, fever may follow the appearance of this inflammation, or this inflammation may be subservient to fever.

955. Whenever this inflammation extends to the cellular tissue, it is sure to destroy it, by forcing it to a rapid suppuration, and thus devastating the parts of this important membrane. Abscesses, or rather collections of matter, are, therefore, formed of unequal size, throughout its course; and when the subjacent parts are exposed by the removal of the skin which before covered them, the muscles are as completely denuded of all their cellular covering, as if they had been most carefully dissected.

956. Should the part attacked in this way be a depending one, the ill-formed pus, or sanies, insinuates itself to an uncertain extent; for, it has no bounds set to its ravages, by a protecting effusion of coagulable lymph, as in a genuine phlegmonic inflammation. Hence, we once saw it run from the lower point of the left scapula, to the base of the sacrum.

957. Notwithstanding the apparent irregularity of this species of inflammation, it has four distinct stages; 1st, inflammation without vesications; 2d, with vesications; 3d, with vesications and suppuration; 4th, gangrene. There is something very peculiar, if not *sui generis* in this inflammation; and on this peculiarity does its danger very much depend; but our limits do not permit us to describe them but in very general terms. 1. Its erratic disposition—as it may in an instant almost leave the part it occupied to seize upon another, however remote or important that part may be. 2. Its disposition to vesicate. 3. The rapidity with which it runs on to its own peculiar suppuration; for it is without any provision, by the effusion of coagulating lymph, to limit its extent. 4. To its strong tendency to gangrene, seeming at once to kill the skin and cellular membrane, by the force of its previous inflammation.

958. Much difficulty has ever been experienced in the management of this disease, especially in children, with whom its progress is almost always more rapid and subduing than with adults; and not less diversity of opinion than difficulty has existed, as to the proper plan to be pursued. In almost every part of Europe, this disease is considered one of great danger; and, in this country, it has had but too many victims. Whether this disease be necessarily one of so much danger, is much to be doubted; unless difference of climate has more influence than the mode of treatment; for it has certainly, within the last few years, been

less fatal than formerly; and this melioration, we believe, is justly attributable to the plan of cure.

959. Dr. Underwood thinks the bark the best constitutional remedy; and saturnine, and camphorated applications, to be the best local remedies. Mr. Burns approves of cold watery applications, where the heat of the part is considerable; but thinks, with Dr. Gartshore, that the camphorated spirit of wine is the best application from first to last. He seems doubtful as to the efficacy of the bark; but recommends from five to ten grains of ammonia,* every three hours—but says, he has derived more benefit from calomel purges than from any other medicine.

960. We shall say a few words upon each of these plans, before we detail the one usually pursued by ourselves, and other practitioners in this city. 1. As the system evidently labours under high arterial action in the commencement of almost every case of erysipelas that requires medical treatment, the bark must not be thought of, either in the first or second stages of this disease; in either of the two last, it may often be proper, if the supuration, or sloughing be extensive. 2. As regards the topical applications recommended by these gentlemen, the cold saturnine have always appeared to us, if not of hurtful tendency, at least of doubtful efficacy. In the early, or first stage of erysipelas, the camphorated spirit we have thought occasionally useful, but never efficacious. 3. The propriety of using ammonia in such immense doses to a child, perhaps, within a month old, is extremely doubtful, even if it were possible to give it, (which, by the by, in our opinion, is extremely problematical;) but its usefulness in any quantity may be justly doubted, especially as the disease, in its commencement, at least, according to Mr. Burns himself, is attended with fever. Of the good effects of calomel purges, we entertain no doubt; but must say, purging with it, or any other cathartic medicine, seems to be much at variance with bark and volatile alkali.

961. It is probable, that erysipelas may have a number of counter-agents; but there are very few, we believe, yet ascertained. In the time of Ambrose Paré, blisters were employed to interrupt the progress of this inflammation, both as regards

* We take it for granted, that Mr. Burns means the carbonate of ammonia, by the simple word ammonia.

the extent of surface over which it might be supposed to travel, as well as the terminations of two of its stages in either suppuration or gangrene. This remedy, however, was either forgotten or laid aside, for nearly two centuries, because the *modus operandi* of the application could not be explained. To Dr. Physick we owe its revival, the importance of which can only be appreciated by those who have witnessed the almost wonder-working operation of this agent. We have frequently succeeded with it, both in the adult and in the child; and can most safely recommend its application, when the inflammation attacks such parts as can readily be covered with a blister.

962. The plaster should be of such a size as will rest with certainty upon the sound skin—if this precaution be not taken, its application will avail but little. When the sound skin is well vesicated, the plaster is to be removed, and the part to be treated as if a blister had been used for any other purpose.

963. It, however, frequently happens, that a blister will be inexpedient, from the peculiar location of the disease; in such case, we use the strong mercurial ointment, (without turpentine,) by covering the inflamed, as well as the sound skin, with a coat of it; and when it is removed, or becomes dry, it is renewed by a fresh application. We use this ointment differently, however, in the several stages of this inflammation; we shall, therefore, describe our method; and,

964. 1. Where the part is inflamed, but not yet vesicated. When we see the inflammation in this stage, we cause the whole of the reddened part, as well as a portion of the sound skin, to be covered with the ointment; which is to be renewed, when the part is deprived of any portion of it.

965. 2. Where the part is vesicated, but the vesicles not opened. In this case, we cause the vesicles to be carefully opened, and the ointment applied as just directed for the first condition.

966. 3. Where the vesicles have opened spontaneously, and the part has become incrustated, and the inflammation spread to a considerable, or to a more limited extent. In this case, we direct the ointment to be applied only to the surrounding inflamed margin, and on a portion of the sound skin.

967. 4. Where portions have proceeded to suppurate, yet a part of the surrounding skin is inflamed. Under such circum-

stances, we open the collections of matter as early as possible; and apply the ointment to the margin, as above directed. (966.)

968. Such is the efficacy of the mercurial application, that it almost immediately arrests the farther progress of the disease; therefore, when practicable, it should be had recourse to early.

969. We know but one objection to this powerful counter-agent—the patient sometimes become salivated. This, however, seldom or never happens with young children, who are most obnoxious to the disease for which it is prescribed. In adults, on this account, we sometimes prefer the blister.*

970. We have already noticed, that the suppuration in the erysipelatous inflammation, is not of a genuine pus; it is always more or less bloody, and generally very offensive—this may also be said, when the part becomes gangrenous. The charcoal poultice, in such cases, is of great value; or the diluted pyroligneous acid may be most advantageously used; or a poultice made of a strong decoction of bark, or even of its substance.

971. Hitherto, we have dwelt upon the external treatment of erysipelas; we shall now speak of the internal remedies which we have found best suited to this disease.

972. In the early stages of this affection, when accompanied by constitutional symptoms, as fever, headach, delirium, &c., the patient should be confined exclusively to the mother's milk, and that given but seldom. The bowels should be kept freely open, but not severely purged, by small, but repeated doses of calomel. Should fever run high, with strongly marked cerebral affection, the child should lose blood from the arm; or from the temples, by leeches.

* It would seem, that the origin of the mercurial treatment is peculiar to this country; and the honour of the discovery is claimed by Drs. Little and Dean. Their claims are urged with such equality, that there would be a risk of doing injustice to one, by admitting the claims of the other.

It appears, that this is not the only mercurial preparation that has been useful in this complaint. A solution of the corrosive sublimate, in the proportion of one grain to the ounce of water, Dr. Schott of this city informs us, has been found equally efficacious. And it may be justly questioned, whether this practice may not be of old date, but, like many other substances, have fallen into disuse, from occasional failures; certain it is, we saw it used very extensively about the year 1785 or 6, in an erysipelatous condition of the leg from phlegmasia dolens. The precise effect of this application is not at this time recollected, as it was supposed at the time by me to be a part of the routine of practice in such cases.

973. Fresh, cool air, should be freely admitted to the body of the patient; and the room should always be well ventilated. Among many people there is a prejudice against this plan; they are fearful of adopting it, lest the inflammation “strike in.” But of this, they should be assured there is no danger; and the plan must be insisted on.

974. When this inflammation runs on to suppuration, or terminates in grangene, the system becomes enfeebled, either by the extent of the discharge, or the peculiar character of the disease; especially, when it has a tendency to become epidemic. Here, we are persuaded, the bark, in some form or other, becomes absolutely necessary; and as far as one case will justify the recommendation, in the form of a sulphate, is the most easy of exhibition, and is as efficacious as in substance or in decoction. The bowels at this time are very apt to become too loose—this must not be permitted to go on, or the little sufferer will speedily sink.

975. To arrest the too free motion of the bowels, the chalk mixture, with minute doses of laudanum, should be given, in the form following:—

R. Creta ppt.	ʒij.
Tinct. Thebaic.	gut. x.
Ol. Carui.	gut. j.
Sacch. alb.	ʒij.
Aq. font.	ʒiiss. M.

Of this a child of ten days old may take half a tea-spoonful every two hours, until better; one of a month, to that of two months, a tea-spoonful, as often, until the bowels are checked. Should it appear to be in pain, an additional quantity of laudanum must be given; say, from one to two drops.

976. The child may now be indulged with the breast, to the extent of its appetite; and its little strength must be husbanded with every possible care. It may, with this view, from time to time, take two or three tea-spoonsful of wine whey, carefully made, and not of too great strength.

977. The whey should be made as follows: take half a pint of new milk, and bring it to the boiling point, in an earthen or silver vessel—at that moment throw into it a common-sized wine-glassful of Madeira, Sherry, or good Teneriffe wine—stir it two or three times round, and then set it in a cool place to separate.

When separated, pour off the whey from the curd, and sweeten it to the taste with loaf sugar.

978. Of that form of erysipelas, which attacks the genital parts of new-born children, we have seen but one instance; and this, not until nearly the whole of the parts were destroyed, and when art could do nothing for its relief.

CHAPTER VI.

OF THE RETENTION OF URINE.

979. It very frequently happens with newly born children, that they do not pass their urine for many hours after birth, or so sparingly, as to afford little or no relief; this creates a great deal of distress, and if not relieved by proper means, will sometimes occasion death. A very remarkable instance of this kind fell under the notice of my friend, Dr. Parrish, and myself, which given in detail, we trust, will require no apology. Mrs. — was delivered of a healthy child, on the 15th of June, 1822. On the 20th, in the evening, the child showed uneasiness; and on the 21st, it cried violently, and continued to be much pained until the 25th. A variety of simple remedies were used for the relief of the urine, which had been either very sparingly passed or entirely suppressed, most probably from the 20th—but without success. On the morning of the 25th, at ten o'clock, we found the abdomen very much distended, even to the scrobiculus cordis; the skin was shining, and the superficial veins were very much enlarged. The child had several very sparing stools, of a dark green colour: two spoonsful of castor oil were given in the course of the morning. At half past one o'clock, P. M., Dr. Parrish introduced a small flexible catheter, and drew off at one time eighteen ounces and a half of a straw-coloured urine.* At seven o'clock the same day, the

* “The introduction of the catheter, spoken of in the case of a child of ten days old. We have never had occasion to employ the instrument at so early an age, and fear that its employment is more easily described on paper than carried

child appeared perfectly relieved; it slept soundly, and took nourishment freely. Two more tea-spoonsful of castor oil had been given since the visit at noon, but without moving the bowels; nor did any water pass. As the child was easy, it was permitted to rest without disturbance.

980. From this time, the water was regularly drawn off by the catheter until the child's death, which happened on the 28th. It had gradually declined from the time of our first visit, and its mouth had become very sore. Permission was not obtained to examine it.

981. We have recorded this case on account of its great practical importance, though unfortunate in its issue. We have seen several instances similar in their general appearances to the one just related, and, like it, ending in death: we have strong reason to believe they may have died of retention of urine, though we were assured that they had passed water—the same was insisted on, for awhile, in the case just mentioned, and, perhaps, there may have been a small discharge, as always happens when the bladder becomes excessively distended. We know that this often takes place in the adult, from the same cause. We ever make it a rule to inquire into the state of the bladder, in all the little complaints of very young children; but we fear we have been too easily satisfied with the reports of the nurse upon this subject—we now make it our business, whenever we have any suspicion that the urine is not freely evacuated, to examine the abdomen of the child, especially if it be reported as swelled—we carefully examine the region of the bladder, with a view to detect any distention of it, if it exist, that we may take our measures accordingly. We are sincerely of opinion, that, had the catheter been introduced twenty-four hours sooner, nay, perhaps

into execution in practice, particularly in the male.”—*Lond. Med. and Phys. Journ. August, p. 149.*

In a case similar to the one which gave rise to the above observation, it may be asked, what other resource does our art afford? I have not declared, nor even insinuated, that the catheter should be used upon slight occasions; but where the retention is confirmed; and where every usual expedient was resorted to, and had failed; should we suffer the patient to die, because the introduction of a catheter is considered difficult? I can truly say, in the above case, the gentleman who performed the operation, found no difficulty whatever.

In relating the above case, I have confined myself to the detail of the main facts; I have not attempted to describe the mode of introducing the catheter.

twelve, the poor infant, whose case is related above, might in all probability have been saved; but, as there was a constant assurance that water passed, no suspicion was entertained of the state of the bladder, until all the mischief was done, that could well happen from its fulness.

982. We suggest, as a matter of probability, that the cases we have witnessed of death in very young children, where the abdomen has been much swollen, and the superficial veins passing over it much distended, and very conspicuous, were similar affections of the bladder, though no such suspicion was entertained at the time. How far a distended belly, (indeed almost to transparency,) with greatly enlarged veins, may serve to distinguish this state of the urinary organs in very young children, must be left to future observation. We have felt it a duty to express this impression, with a hope that it may awaken attention in those whose province it is to witness numerous cases of sickness, especially in very young children. The case just related is an extreme one; many occur where the retention is not so absolute, yet it is every way important to offer some relief to the bladder. For the most part, these slight retentions are easily removed, by a few drops of the sweet spirit of nitre, once an hour, in a little sweetened water; or, if obstinate, it may be aided by the warm bath, and a tea-spoonful of castor oil. A little parsley root tea, also, succeeds remarkably well.

CHAPTER VII.

OF APHTHÆ.

983. This complaint is generally called the baby's sore mouth: it consists of a greater or less number of white pustules on the inside of the mouth. It very generally begins on the inner part of the lower lip, or corners of the mouth, and resembles a small coagulum of milk. From this point it sometimes spreads itself very rapidly over the inside of the cheeks, tongue, and gums. When this efflorescence is extensive, the child suffers very much,

and is frequently embarrassed in its sucking; it cries, and evidently betrays that it is in pain; it is very restless and very thirsty, as it evinces by its frequent stirrings, and its disposition to be continued at the breast. The eruption in its mildest form is very white, and looks as if a stratum of milky coagulum were spread over the mouth. It sometimes confines itself to the centre of the cheeks, at others to the lower lip, or one side of the tongue. In its severer forms, the appearance of the eruption is of a dark brownish colour, or extremely red; but both are evidently grades of the same affection, changed either by mismanagement, constitution, or the force of the remote cause.

984. This affection is thought to be altogether of a symptomatic kind—or very rarely idiopathic. It is almost uniformly preceded by a deranged condition of the alimentary canal, and always, we believe, by some disturbance of the stomach itself. The brain also shows signs of participating in this complaint, as there is almost always an unusual inclination to sleep, though the child is frequently disturbed in its nap by some internal irritation, perhaps, of the bowels themselves. This disposition to sleep is so well known to nurses, that they will frequently tell you, “the child is sleeping for a sore mouth.” The bowels are often teased by watery, acrid stools, of a greenish colour; their discharge is frequently attended with the eruption of much wind, and to judge from the noise, it would be supposed there was a very large discharge of fæces, though, upon examination, it is found to be very sparing.

985. The alvine discharges are frequently very acrid, so much so sometimes as to excoriate the verge of the anus and nates very severely; especially when due attention is not paid to cleanliness, or to the frequent changing of the diapers. The stomach is also sometimes much deranged; vomiting the milk very soon after it is received into the stomach, in the form of a dense curd, mixed with a porraceous mucous substance. If the milk be not voided by vomiting, the stomach constantly discharges, by eructations, a gas with a very sour smell. The child, when the disease is severe, soon becomes debilitated, and rapidly emaciates; it is almost constantly harassed by severe colics, and profuse diarrhea; its stomach will scarcely retain the little it can swallow; and the œsophagus sometimes becomes so loaded with aphthæ, that it can no longer transmit the small quantity which is re-

luctantly admitted into the mouth; and the child dies, either from the exhaustion consequent upon the profuseness of the discharges from its bowels, or from inanition.

986. It is a popular belief, that this aphthous efflorescence passes from the mouth through the whole tract of the alimentary canal, to the very termination of the rectum; and the excoriation at this part is offered as evidence of the fact. Whether this be true or not we do not know, for we are not in possession of any facts from dissection which decide the point. We once examined a body which certainly died from aphthæ; the examination of which would by no means tend to confirm this common belief. A child, on the tenth day after birth, was observed to have a number of white spots upon several different portions of its mouth, which rapidly spread over its whole surface. It had the usual premonitory and accompanying symptoms, which increased daily in severity, in spite of every effort to oppose them. It was a feeble weakly child, of a consumptive feeble mother. Its sufferings were very great, though under some control from laudanum, so long as it could be taken by the mouth, or retained by injections—coat after coat of aphthæ were thrown off, and each new crop appeared to be more abundant, and less amenable to remedies, until, at last, at the end of two weeks of severe suffering, the poor infant could not swallow a drop of the thinnest fluid. Injections of bark and mutton tea, in conformity with popular opinion, were resorted to, but all in vain; the child, in a few days more, died from absolute starvation, or, at least, the catastrophe was certainly hurried by the impossibility of receiving nourishment.

987. We examined the body after death—we found the whole tract of the œsophagus literally blocked up with an aphthous incrustation, to the sphincter of the cardia, and there it suddenly stopped. The inner coat of the stomach bore some marks of inflammation, as did several portions of the intestines; but not a trace of aphthæ could be discovered below the place just mentioned. This case would, therefore, create a doubt, whether this affection besieges any other parts of the body than those just stated; namely, the mouth, posterior fauces, and the œsophagus to the sphincter of the cardia, since, perhaps, none could have been of greater severity; but it is with us a solitary case, and should not be received for too much. Dr. Heberden says, “The

aphthæ are supposed not only to infest the mouth and fauces, but to be continued down through the whole intestinal canal. In two who died of a lingering fever, and whose mouths were covered with aphthæ which hung in rags all over it, there was not the least trace of them that could be found in dissection beyond the fauces.”*† The excoriations about the anus can certainly be accounted for, without the presence of aphthæ to produce them; in bad cases the stools are always extremely acrid, and the parts over which they constantly pass and spread, are, at such a tender age, very delicate, and very readily excited to inflammation.

988. Dr. Good seems to admit, without hesitation, the transmission of aphthæ through the intestinal canal; for he says, without reserve, “The fauces become next affected, and it descends thence through the œsophagus into the stomach, and travels in a continuous line through the entire course of the intestines to the rectum, the fæces being often loaded with aphthous sloughs.‡

989. We are afraid there is too much taken for granted in this account: we know of no decided evidence of the fact, nor does Dr. Good name any authority for the statement. The case alluded to was certainly one of death from aphthæ; but, in it, the aphthous efflorescence stopped at the cardia. Is it probable that any child could survive this affection, did it travel the whole course of the intestinal canal? We think not—yet aphthæ is rarely a dangerous disease in infancy. Dr. Good’s description of this affection would certainly lead to the conclusion, that it is the ordinary march of the disease to pass through the bowels, and manifest itself at the verge of the anus.

990. Now, this cannot be so; since it is in violent and long-protracted cases, alone, that the anus discovers any signs of irritation from this cause, which would not be the case, were Dr. Good’s account correct.

991. Dr. Good and others suppose that aphthæ communicates itself by a specific contagion; and give, as evidence, the excoriations of the nurse’s nipples. We do not hesitate to believe, there

* Commentaries, p. 31.

† “It is well known, too, that in *small pox*, no pustules are traced beyond the pharynx and larynx, even in the most severe cases, when the mouth and tongue are thickly covered with the eruption.”—*Tweedie’s Illustrations*, p. 65.

‡ Study of Medicine, Vol. II. p. 391.

is a discharge from these little pustules which may be highly acrimonious to a denuded skin, but we think this is perfectly innocuous to a sound one. For we have never seen sore nipples produced by aphthæ, where the skin of these organs was perfectly sound. That they aggravate the tenderness and inflammation, when these parts are tender and abraded, we admit, and so would any other acrid substance, without having recourse to the belief of a specific contagion. If this were the case, why do not the lips of children, labouring under this affection, betray its influence?

992. That this complaint is occasionally epidemic, there is every reason to believe; and this circumstance, among some others to be mentioned, renders the opinion so commonly credited, (of its being a sympathetic affection,) very questionable. We have always considered aphthæ as arising from some peculiar condition of the stomach; but, from some late cases, and more mature reflection, we think it may be otherwise. Our reasons for *doubt* are,

993. 1. We have recently seen this affection in two cases, where the stomach and bowels were in the most perfect order before the eruption; but they became disturbed a little during the progress of the disease.

994. 2. That this complaint has been very often removed by topical applications alone, where the efflorescence has been very considerable, and where there was no remedy of any kind addressed to the stomach and bowels.

995. 3. That we do not uniformly see this complaint where there has existed great disorder of both stomach and bowels, and these of a permanent kind.

996. 4. That, however the stomach and bowels may be disturbed by acidity or other inconvenience; or, however long these may continue, if the child have had this complaint, it is not renewed, though the individual is not exempt from a second attack, like measles or small-pox; for, in certain chronic affections, they may be again visited by aphthæ.

997. 5. That this affection is sometimes epidemic, as stated above; for Dr. Good informs us, that “not only all the children of the same family, however cautiously separated from one another, but many of those of the same neighbourhood have been known, at times, to suffer from it simultaneously.” (Vol. II. p. 391.)

998. 6. That this disease is almost always ushered in by some

cerebral affection; as great drowsiness, or watchfulness—the first is by far the most common.

999. 7. That other portions of mucous membranes are liable to the same kind of eruption, without the condition of stomach or bowels being instrumental in its production; for we have seen it most plentiful, within the labia pudendi, as well as on the internal face of the prepuce.

1000. These facts have made us lately question the sympathetic origin of aphthæ; yet we admit, they are not altogether conclusive in our own mind; but we thought it proper to suggest the possibility of its being an idiopathic disease of the mucous membrane.

1001. This symptomatic affection is not confined to early infancy; it shows itself in the more advanced periods of childhood; and from that, to any period of human life—it is sure to attend the last stages of almost every long-protracted disease; especially those which may have wasting discharges; such a phthisis pulmonalis, dysentery, or diarrhea; and when it does appear, it is almost sure to be a fatal harbinger.

1002. This disease is not essentially accompanied with fever: if it accompany any choice affection, which is attended with fever, we do not find it to heighten the existing one.

1003. Weakly children, and especially those born before their full period, are more obnoxious to this complaint than the robust, and those who have tarried to their full time in the uterus—the children of weakly women, and particularly those who make bad nurses from scarcity of milk, or from its not being of a sufficiently nutritious quality, are more disposed to this affection than the children of hale women, who have plenty of nourishment of good quality. The children fed much upon farinaceous substances, (535, 536,) are especially exposed to the attack of this disease, particularly when their food is sweetened with brown sugar or molasses.

1004. The treatment of this disease must always be commenced by a regard to the stomach and bowels: there is, we believe, a superabundance of acid, which should be destroyed by the use of absorbents. If there be no diarrhea present, we are almost certain of finding whatever evacuations there may be, of a green colour; and when this is the case, small doses of magnesia should be given, until the bowels are purged; and this may

be repeated *pro ra nata*—should, however, the bowels be urged to frequent dejections of a sparing watery kind, and especially if attended with pain or straining, the following formula we have long adopted with entire success:—

R.	Magnes. Alb.	Ust. gr. xij.
	Tinct. Thebiac.	gtt. iij.
	Sacch. Alb.	q. s.
	Aq. Font.	℥j. M.

Of this a tea-spoonful is to be given every two hours, until the bowels are more tranquil. Or, if green stools be frequently evacuated, we may substitute a dram of prepared chalk for the magnesia; or, if there be no fear of the diarrhœa weakening too much, a scruple of the prepared chalk may be added to the twelve grains of the magnesia: by this combination, we ensure the destruction of the acid, and prevent the lax from being too soon checked. We have found very often a great advantage from equal parts of lime water and milk, where green stools continued, but without diarrhœa—a tea-spoonful of this mixture may be given four or five times a day.

1005. When the disease has proved obstinate, and the bowels are much irritated by frequent, small discharges, and especially if there be any streaks of blood, we have found the most decided advantages from a tea-spoonful of the oil of butter given three or four times a day. The oil of butter is prepared by putting a lump of perfectly sweet butter into a tea-cup, and pouring on it a quantity of boiling water, and agitating it well with a tea-spoon, that it may be deprived of its salt—the oil is then skimmed off as it is wanted; should it not be sufficiently fluid, pour off the cold water each time, and add fresh warm water. The gum Arabic water, made of an ounce of the gum and a pint of water, is a most valuable remedy.

1006. During the continuance of this complaint, the child, when practicable, should be confined to its mother's milk; and the mother should at this time avoid such diet as would become acescent on the stomach—most of the common vegetables should be avoided, though she may indulge freely in boiled rice with her meats at dinner—she should abstain from all kinds of liquors, especially the fermented. She may drink freely of rice water, toast water, or milk and water.

1007. We have constantly found in this complaint, that local applications, when properly managed, are of the utmost consequence; we, therefore, direct their immediate use.* The best we have ever tried, is, certainly, equal parts of borax, (borat of soda,) and loaf sugar, rubbed together until very fine; a small quantity of this in its dry state is to be thrown into the mouth, and repeated every two or three hours. This mixture is quickly dissolved by the saliva of the child, and is soon carried over the whole of the fauces. We should be very positive in forbidding the mouth of the child to be rubbed with any thing whatever, under the pretence of cleansing it. The cruel and mischievous practice of scouring the mouth with a piece of flannel, cannot be too strongly reprobated. We have seen a poor little creature in agony, after it had undergone this rude discipline from the heavy hand of an unmerciful nurse; nay, we have seen it bleed, even freely, from the barbarous treatment it received under the specious pretence of doing it good. We are persuaded, from many years' experience, that the mouth requires no other washing or cleansing, than what may be procured from the application of the borax, and the frequent draughts of the mother's milk.

1008. We do not, however, continue the borax, should the efflorescence become discoloured; we then generally employ the Armenian bole in fine powder with loaf sugar, and use it as we have directed for the borax; but should this fail to give pretty speedy relief, and particularly if the mouth be very red, livid, or ulcerated, we have recourse to a weak decoction of the bark. We order half an ounce of powdered bark to be stewed in half a pint of water for twenty or five-and-twenty minutes over a slow fire, and then permit it to settle; about the third of a teaspoonful of this is put into the child's mouth, every hour or two—as it is not agreeable to the child, it will not be much disposed to swallow it; by which means it will be diffused over the whole

* Dr. Underwood differs with us upon this head, though we have no hesitation to say that general experience is much in our favour. He says, "In regard to applications to the part, it is necessary to observe, as they have little to do in curing of the complaint, it will be improper to have recourse to them very early." Yet, a little farther on, he confesses that he has "met with an instance of a very copious thrush disappearing after clearing the mouth with borax and honey, at noon and at night, on the fourth day of the disease."

mouth—we have often seen this attended with the most marked advantage.

1009. During the continuance of this complaint, the most scrupulous attention should be paid to cleanliness—the child's nates should be washed with flaxseed tea after every evacuation; and the excoriated parts should be constantly defended by a coat of fine hog's lard, or the best quality of soft pomatum. The same diaper should not be used twice without washing.

CHAPTER VIII.

OF COLIC.

1010. Owing to improper feeding, or the peculiar quality of the mother's milk, or, perhaps, in some instances to the particular constitution of the child, it becomes liable to severe attacks of pain in the bowels, which continue for several hours, with great suffering to the poor infant. These colics are of two kinds—1st, those which attack the child at any time of day, without evident cause; and, 2dly, those that observe a periodical movement.

1011. In the first, the child may be seized at any time of the day, without our being able to trace the cause to any evident source. This kind generally attacks children of feeble constitutions, and though the mother may have plenty of milk, and the child may suck it very freely, yet it does not thrive; or it may attack children situated the very reverse of the one just described—here the child has not sufficient nourishment from the mother, or it is of bad quality: to supply the first defect, the stomach is overloaded with crude or improper diet, which not only fails to afford it a healthy nourishment, but quickly turns acid, to the decided injury of the child. Perhaps, diarrhea, with green stools, is produced; or it may not have too many evacuations, but they are evidently the remains of ill-digested food. When pain arises from the use of improper food, the child almost always becomes uneasy as soon as it swallows it; and, if it arise from ill-elaborated milk, it complains as soon as it is done sucking. Its little abdomen becomes swollen and tense, and it writhes

its body as if in the utmost agony. It sometimes becomes suddenly relieved, by eructating a considerable quantity of wind; or it passes downwards, carrying with it a very small portion of fæces.

1012. It is obvious, that we must change the diet of the child, or alter the mother's milk, if we expect to relieve this complaint. We have already said enough on the subject of diet for young children, and need not repeat it here. When we are satisfied it is from the quality of the food that this complaint proceeds, it would always be advisable, if it were always practicable, to confine the child altogether to the milk of the mother; to destroy acidity by small doses of magnesia, especially if there be costiveness, as is sometimes the case. A small tea-spoonful of warm sweet oil, three or four times a day, is a remedy very often of great value. Should it depend upon the mother's milk, an attempt should be made to alter its quality, by an almost total change of diet, and well regulated exercise. If this do not succeed, we are obliged to have recourse to temporary remedies, rather than witness hourly the sufferings of the afflicted infant. This complaint most frequently commences in the month, but when it may cease it would be difficult to say.

1013. We have sometimes been so fortunate as to succeed completely in curing this complaint, by the plan just suggested; but it requires the strictest attention to attain success, and this continued for some time most perseveringly. Care should be taken that the child do not remain wet for a long time after its evacuations, from an unfounded opinion that it makes them hardy to use them to cold. By this management, the feet and legs become chilled; and the bowels, in consequence, are made to suffer a double portion of torture. During, however, the trial of changing the food, we must temporize, and administer immediate relief to the sufferer: for this purpose, we have been in the habit of employing the following mixture, with the most decided advantage; it rarely failing to give instant relief, and, sometimes, effecting an entire cure:—

R. Magnes. Alb. Ust.	℥j.
Tinct. Fœtid.	gut. lx.
—— Theb.	gut. xx.
Aq. Font.	℥j. M.

Of this twenty drops are to be given in a little sweetened water, when the child is in pain; and, if not relieved in half an hour,

ten drops more are to be administered. This dose is calculated for a child from two weeks to a month old. If it be older, a few drops more must be given; and as the child advances in age, or becomes accustomed to its use, the proportions of the ingredients must be a little increased. We must, however, caution against a too rapid increase of the dose; as this is by no means necessary; and it would be wantonly subjecting the child to the use of a medicine, which should only be given when pain demands its exhibition.

1014. The other form under which we are to consider this complaint, is, where it becomes distinctly periodical. It very often, however, commences with the erratic form, and after continuing in this state for some time, it settles down to a certain period of the day; this is usually from four to six o'clock in the afternoon. Generally speaking, this form does not appear to be so injurious to the health of the child as the other; indeed, it seems that the child even thrives with it, so that one might almost say, it is "cry and be fat." Certain it is, that some of the fattest and healthiest looking children are troubled with it. We have never found the diet of either the mother or child to have much effect upon this form of the complaint, and in this it differs materially from the first. It would seem to depend upon some constitutional peculiarity, over which we have but a temporary control; as it very frequently will stop of itself, as soon as the child reaches the age of three months: hence the old women say, the child has "the three months' belly-ache."

1015. The child who is subject to this complaint, is usually habitually costive; but we have never, we think, derived any advantage from the exhibition of purgative medicines: indeed, we think this in general to be a bad plan. When the constipation is more than usually protracted, we order a little opening medicine, of a mild kind, such as sweet oil, or the castor oil, syrup of rhubarb; or manna, as sweetening in the food, when the child feeds; or we direct an injection of molasses and water, or the introduction of a suppository of soap.

1016. For the immediate relief of the child, we give it the mixture, as just prescribed: only observing, it should be administered the instant the paroxysm is about to commence. Considering this as a true periodical disease, we have given a decoction of the bark for it, with the happiest effect, in several in-

stances; but it has not always succeeded.* This complaint should excite but very little apprehension, as we believe it is never dangerous, and is almost sure to wear itself out after a certain period.

1017. We will relate a curious instance of the influence of an aching tooth upon the secretion of milk, and its indirect agency in producing the “belly-ache” of the first form. Mrs. ——— was delivered of a fine, healthy-looking boy, which appeared to do perfectly well for the first two weeks after birth. At this time it became uneasy, and frequently cried—the usual domestic remedies were from time to time employed for its relief, without the smallest benefit. The complaint seemed to increase every day; the pain became more severe, and longer continued, the stomach and bowels were affected; the one with sour vomitings, the other by frequently discharging green stools. The child could obtain no relief but from laudanum, and this we were obliged to give in large and constantly increasing doses. The emaciation was so great, as to render the child lighter at three months old, than when first born. In this situation did things continue, without much aggravation or amendment, until the child was five months old. By this time it was, (without a figure,) nothing but skin and bones.

1018. At one of our visits we observed the mother apply her hand very suddenly to her face, and press it forcibly, as if in pain from a tooth—we inquired of her what she ailed; she informed us, she was very much tormented, both by day and by night, with tooth ache, and had been for some time before the child was born, and ever since. We immediately declared our opinion, that this was the cause of the affliction of her child—the constant pain she was enduring, and the great loss of sleep, so affected her stomach, and indirectly the breasts, that they could not yield a healthy nourishment. We advised her to send

* We have lately succeeded, in two instances, in arresting this distressing complaint by the use of the sulphate of quinine. The paroxysms occurred in the afternoon about four or five o'clock; and they would continue several hours with great violence. The following prescription was employed:—

R.. Sulph. Quinine,	gr. iss.
Sacch. Alb.	3 ^{iss.}
Aq. Font.	3j. fo. sol.

A tea-spoonful every hour, in the absence of pain.

immediately for a dentist, and have the tooth extracted—this was accordingly done; and from that day the child began to recover, and in a short time was perfectly restored to health.

CHAPTER IX.

OF OPHTHALMIA.

1019. From about the fourth to the seventh or eighth day, or sometimes longer, after delivery, the eyes of the child are found to inflame; they are first observed to glue up in the morning, and quickly after the whole of the lids become swelled, and, especially, in the early part of the day, or until the eyelids have become unclosed, and given issue to some purulent matter, the eyes themselves are soon found to partake of the inflammation of the lids, and have a peculiarly fiery appearance; the child now keeps its eyes entirely closed, or closes them at the approach of even a weak light. After a plentiful secretion of pus has taken place, which generally happens after the third or fourth day, the lids during the night become pretty firmly attached to each other, in consequence of the discharge from them becoming inspissated, and thus gluing them firmly together: this permits a considerable accumulation of pus behind them, which distends the upper eyelids, especially, very considerably, and swells them sometimes even with the socket. Upon moistening the eyes with warm water, the lids are enabled to separate, which permits a considerable quantity of pus to discharge itself,—the eyes now seem to swim in pus, and the dark parts of them can no longer be seen. The whole of the internal linings of the eyes, which become exposed upon separating the lids, is of a bright scarlet red, manifesting an intense degree of inflammation, which, if not interrupted by very active remedies, runs on to disorganization, and total blindness.

1020. The remote cause of this complaint is some foreign matter they acquire in transitu—this may be the matter of gonorrhœa, or leucorrhœa.

1021. This disease may, therefore, with much propriety, be called “the purulent ophthalmia.” It would seem, that it could only arise, at the age at which it appears, from the application

of some foreign matter, as of leucorrhœa, or gonorrhœa. We are firmly persuaded, that one or other of these matters, is the cause of the affection under consideration; and for the following reasons:—

1022. 1. Because it always makes its appearance within ten or twelve days after birth—a period in which such a cause might be supposed to act.

1023. 2. Because in every instance in which we have met with this affection, we have learnt upon inquiry, that the mother was subject to leucorrhœa; and in some few instances, in loose characters, to gonorrhœa.

1024. 3. The suddenness, extent, and severity of the inflammation, together with the profuseness of the suppuration, would seem to denote the application of some violent irritant to this tender and susceptible organ.

1025. On this account, at the first washing, we direct the nurse, when we know or suspect this condition of the mother, to be very particular in applying plenty of water to the eyes. We have taught this doctrine of the remote causes of purulent ophthalmia, for more than thirty years; and have recommended the plan of freely washing the eyes, for the same period; and we have reason to believe, we have in some instances prevented it altogether, and in others have rendered it much lighter. In one case, where we knew gonorrhœa to be present in a violent degree, we prevented this affection almost altogether, by very carefully having the eyes washed with warm water for fifteen or twenty minutes, and pouring it upon the eyes in a full stream. The eyes suffered, however, a little; a slight inflammation supervened, but was relieved in two or three days by the mucilage of sassafras alone. We are of opinion, however, that the inconvenience the eyes suffered, may be pretty justly attributed to the discipline they underwent in washing.

1026. The mode of treatment is, perhaps, precisely the same in both instances—or, at least, we know of no substance that will more certainly control the inflammation of gonorrhœa than that arising from leucorrhœa; unless in desperate cases of the former, we might apply some mercurial preparation—for instance, three or four grains of calomel suspended in an ounce of gum Arabic solution, and applied three or four times a day, in addition to the remedies we shall presently mention. But this is altogether hypothetical.

1027. Nothing can be more unsatisfactory, than Dr. Underwood's description of ophthalmia purulenta, nor any thing more vague than his plan of cure, if it even deserve that name. Instead of ordering his remedies to the different stages of the complaint, and pointing out the time, and the signs by which the time might be known at which it would be proper to change them, he confounds under one general direction, opposite and incompatible remedies.

1028. After vaguely describing the disease as just stated, he recommends in one breath, purging, leeching, and blistering, to the back, neck, and behind the ears; the last to be renewed every three or four days. "The edges of the eyelids should be *greased* throughout the day; at night, a lead-water poultice; but if the eye be affected by the weight of the poultice, it must be removed, for rags dipped in cold brandy and water, or some other more astringent lotion." He then adds,

1029. "Throughout the complaint, *astringent and stimulating* applications are to be made use of, unless the complaint be very slight, or sensibly give way very soon to mere greasing the lids, as it sometimes will." And then gravely declares, that "should emollient poultices, and merely cooling collyria be depended upon, the event were likely to be fatal."

1030. I would ask any inexperienced practitioner, if he could possibly attempt to cure this formidable inflammation, by the direction just given? At one moment, the eyes are to have blood extracted from them; then they are to have astringent and stimulating remedies applied to them: "For if you depend," says the Dr., "upon merely cooling collyria and emollient poultices, the event may be fatal." Yet he directed, just before, that the eyelids should be *greased* at night, "which will very often cure the disease alone." We are of opinion, that no greater error can well be committed, than the too early use of astringent or stimulating collyria. We are persuaded, we have seen several eyes destroyed, by their ill-timed use.

1031. Mr. Burns also recommends, in the beginning of this disease, "some astringent solution;" than which, we feel it our duty to say, there cannot well be a more hurtful application. We have been called in consultation several times, where the plan of Dr. Underwood and Mr. Burns had been employed; and from the state of the eyes when we first saw them, we are altogether convinced, that the stimulating or astringent collyrium had done

irreparable mischief. We are, therefore, persuaded, they never can be successfully employed, but after considerable abatement of the inflammation. Even blisters, when used too early, are oftentimes mischievous, though highly important in the progress of the cure.

1032. This case must be actively pursued by remedies, if any good is to be derived from them; there is no time to temporize; and the most vigilant attention must be paid to the eyes, or they quickly perish. We should commence our plan by leeching—about three common-sized ones should be applied to each eye, or rather to the temples (if both be affected;) the bleeding from the leeches should be encouraged for some time by the application of a soft bread and milk poultice, confined between the folds of fine linen. After the weeping from the leech wound ceases, the eyes should be exposed to the air in a very dark room, and should be kept cool by a very weak solution of the acetate of lead in rose water, in the proportion of two grains of the former to an ounce of the latter. This is best employed by washing the surface of the eyes frequently, with a fine piece of linen rag, wet with the solution. The eyes should not be bandaged up, as heat does much mischief. Should the eyes betray a disposition to glue up, notwithstanding the frequent moistening, care should be taken to prevent it, by washing them carefully with the mucilage of the pith of sassafras, every hour or two. We should keep the bowels freely opened, or rather purged; and for this purpose, we have found the following answer extremely well:—

R.	Calom. ppt.	gr. iv.
	Magnes. Alb. Ust.	gr. viij.
	M. div. in	vijj.

One of these powders to be given morning and evening, mixed in a drop of any common syrup. Should this quantity not purge sufficiently, let another powder be given—should it operate too freely, give but one.

1033. If the inflammation be not abated by these means in the course of forty-eight hours, the leeching should be repeated, and the other treatment recommended strictly followed. As soon as the violence of the inflammation is overcome, we should apply a blister to each temple, which should be encouraged to discharge, by dressing with basilicon or weak savin ointment. Dr.

James* says, that "blisters have occasionally been applied over the closed eyelids, with the best effect." We can say nothing of this from our own practice, but it can be safely relied upon, coming from such authority.

1034. After the disease is so much weakened as to permit the child to open its eyes in a dark room, we may safely begin to use some weak, mild collyrium with advantage; the best that has presented itself to us, is a very weak solution of the acetate of zinc, as follows:—

R.	Acetas Zinci.	gr. ij.
	Aq. Rosar.	℥ij. ft. sol.

The eyes to be washed with this four or five times a day.†

1035. It is found to be very useful to wash the matter from the eyes by injecting warm soft water between the lids, three or four times a day, by means of a small syringe. The mother's milk is also thought to be very useful in preventing the eyelids from sticking together, by being frequently milked upon them.

1036. The child is sometimes afflicted with pain in the bowels, which occasions it to cry very much; this should be prevented by giving it a little mild anodyne of almost any kind, half a drop, to a drop of laudanum in a little sweetened water; or a little of Dalby's carminative from time to time, will be found a very good substitute for the laudanum, or the mixture prescribed above (1013) which will not produce constipation.

* Burns' Midwifery, Vol. II. p. 32. Note.

† The stage of the inflammation, constitutes an essential point in the treatment of Ophthalmia; and when this is lost sight of, much mischief is oftentimes done, Thus, the experiments of Wilson, Philip, Hastings, Gendrin, and Broussais, have ascertained that *immediately* after the application of any irritating substance to a susceptible surface, the circulation in the vicinity of the stimulated part becomes much more rapid, while the calibres of the vessels become considerably diminished. But at a certain period *after the irritation* has caused an increased flow of blood to the part, other phenomena present themselves. The capillaries become gradually enlarged; the circulation becomes retarded, and if the congestion continue, the blood becomes stagnant. But, should the congestion be diminished, the blood gradually recovers its mobility, and the dilated vessels recover their natural size, and the circulation resumes it wonted activity. It was, however, found, that a second stimulus, to the congested part, served to dissipate the accumulation of blood, caused by the first stimulus. Hence, the utility of this moderately stimulating collyrium in the stage of the inflammation at which it is recommended. The nitrate of silver in solution in the proportion of one grain to the ounce of distilled water, is highly spoken of in this state of the inflammation.

CHAPTER X.

OF THE ULCERATION OF THE MOUTH.

1037. Children are frequently troubled with ulcerations of the mouth; it oftentimes confines its attack to the inferior portion of the frænum of the tongue. It usually commences by a small inflamed point, and pretty rapidly extends itself along the inferior margins of the tongue, or rather the loose cellular portions of the skin to which the tongue is united—it seldom attacks the tongue itself, and for the most part confines its ravages to the gums, but especially to the cheeks, and the frænum and its dependencies, where it most commonly commences. The edges of the sores are generally pretty high, and much inflamed, and the ulceration deep in proportion to its surface.

1038. The child is first noticed to slaver very much, and to become fretful and uneasy, especially when it is about to take the nipple, which it frequently seizes, and then lets it go with a whining cry, as if in pain. Fever almost always is present at the beginning of the complaint, but pretty soon subsides after the ulceration has taken place, and the drivelling has become pretty considerable. The bowels are almost always confined, and the palms of the hands unusually warm.

1039. The complaint is generally of pretty easy management, if it be attended to at a proper time, or before the ulceration is extensive. Before we use any topical application for this complaint, and particularly if the febrile state be not passed, we should purge the child freely by magnesia, or small doses of calomel, and this plan should be continued until the system be free from fever. After the bowels are well emptied, or there is no longer fever, we may use topical applications with great profit. The following has, so far, never failed us:—

R. Sulph. Cupri.	gr. x.
Pulv. C. Peruv. opt.	ʒij.
— G. Arab.	ʒj.
Mel. Commun.	ʒij.
Aq. Font.	ʒiij. m. et f. sol.

The ulcerations are to be touched with this mixture and solu-

tion twice a day, with the point of a camel's hair pencil. This has always speedily put a stop to the disease.

1040. There is another ulceration of the mouth, and especially the gums, which takes place in children who are cutting their teeth, and particularly the back teeth, when a number are about to make their appearance together; this is a very different state of the mouth from the one just noticed. In this complaint the gums become swollen, very dark-coloured, and spongy; they bleed from the slightest force; the child drivels constantly; the breath is extremely offensive; and there is always more or less difficulty in swallowing. The teeth that are cut at the time, soon decay; and those which were through before the ulceration commenced, become injured. We have rarely found any other treatment necessary, than cutting the gums, and having the mouth frequently washed with a pretty strong decoction of bark.

1041. Dr. Underwood calls this affection of the mouth *aphtha gangrenosa*, and has given a very good general description of it; and why it should be classed with *aphtha*, we are at a loss to understand. For the *aphthous* appearance spoken of by Dr. Underwood, we have never witnessed—that is, we have never seen real *aphthæ* attend this complaint. We have frequently observed the little dark-coloured sores he speaks of, but they do not bear the slightest analogy to *aphthæ*. It is a disease of the gums arising from cutting the last of the first set of teeth—it, therefore, never attacks after this process is completed; or, at least, not until the teeth of second dentition are about to appear. The gums first swell violently, and become of a very dark red; they are so extremely tender, as to make the child refuse its food, or sometimes even the mildest drinks. After the inflammation has continued several days, the parts of the gums immediately over the teeth about to be protruded, give way by ulceration to a greater or less extent. Other portions of the gums will now be subject to the same process, so that nearly the whole mouth will be in a state of ulceration.

1042. This disease, Dr. Underwood says, is never dangerous; we have never seen a fatal termination of it ourselves; though we have seen it protracted to a great length of time, especially with children who have had bad teeth.

CHAPTER XI.

INFLAMMATION AND SWELLING OF THE BREASTS
OF NEW-BORN CHILDREN.

1043. It occasionally happens, that children newly born are found to have their breasts swollen, and evidently inflamed. This exists in various degrees, from a slight tumefaction, to one that threatens suppuration.

1044. There is a vulgar opinion, that these enlargements proceed from a quantity of milk within these little bodies, which must be squeezed or milked out, that mischief may not follow. This absurd opinion, has, unfortunately, led to the preposterous, and mischievous practice just alluded to; in consequence of which, the parts have become so irritated, as to occasion much pain, and increase of inflammation. The little tumour has been violently pressed, with the view to force out impacted milk; but being disappointed in its not appearing, the pressure is renewed again, and again, and each effort with an increase of force; since, agreeably to them, if the cause be not removed, serious consequences will follow to the parts, and, perhaps, in females for ever, destroy their usefulness. In thus pursuing a bad theory, by a worse practice, the consequences which they so much dreaded, have absolutely taken place: suppuration has sometimes followed these rude manœuvres, and has for ever destroyed the organization of these most useful parts.

1045. Or should the inflammation be controlled by the use of suitable remedies, and thus prevented from running on to suppuration, still so much mischief has been done these parts, by rough handling, as to destroy their organization; or so much to injure it, that they never can serve the purposes for which they were intended.

1046. It cannot, therefore, be too peremptorily forbidden, that these parts should be meddled with; for all that is necessary to their restoration, is a little time; or the application of a picce of linen, moistened with a little sweet oil, unless the tumours be unusually large, and the inflammation very

considerable. In this case, a bread and milk poultice, renewed every three or four hours, will be almost sure to restore them to health in a few days.

1047. We have never seen any other treatment necessary; where the parts had not been ill managed by an ignorant and over-officious nurse; but we have, in two instances, after mismanagement, been obliged to leech the parts, and continue poulticing for some time after. It would be difficult to say, how these swellings are formed, especially as they are almost always congenital, or rather connate.

CHAPTER XII.

ON DENTITION.

1048. We have already spoken (page 204) of this operation, as one among the important acts of the system; therefore, we shall not repeat here the order of the appearance of the teeth, nor the process by which this change in the condition of the mouth is effected. We shall now confine ourselves to the morbid phenomena of this process, and the best modes of relieving them when they occur.

1049. One of the most remarkable circumstances attending teething, is the variety of sympathetic affections it gives rise to; so that from the number, and oftentimes from their severity, this act of the system is one of great suffering, as well as oftentimes one of great danger.

1050. The calculations of the mortality of children at this period, have always to us appeared to be excessive; some, as Dr. Arbuthnot, making it one in every ten, others, one in every six. That many children die at this time, must be acknowledged; but it should be recollected, that, at this period of life, children are subject to many other complaints, beside teething, to which they may fall sacrifices. Yet we are willing to admit, that the act of teething, abstractly considered, has sometimes severe penalties attached to it; and but too frequently disturbs the system, and calls into action many latent dispositions to disease,

which otherwise might have slumbered to a more remote period, or have been finally overcome—therefore, in most instances, teething is but indirectly concerned in producing the formidable mortality of children at this age.

1051. Teething is instrumental, sometimes, in producing death, by the condition in which the act itself places the system; by exciting fever, or by disturbing the natural functions of the alimentary canal; therefore, when the child is attacked by any acute disease, that disease is almost certain to be aggravated by the existing condition of the system. Hence, the mortality of the small-pox, measles, hooping-cough, &c., at this period. Yet it cannot be truly said, that many diseases are necessarily connected with the acquisition of teeth.

1052. The same may be said of certain chronic affections; as scrofula, glandular swellings, consumption, rickets, &c. If either have been developed before this period, they are now sure to be aggravated, and the child but too frequently succumbs; or, if they have not been previously developed, they are now but too often called into action.

1053. The system at the period of teething is more irritable, as well as more feeble, than in the after periods of life—hence, when several teeth are making their way through the gums at once, it will suffer more than when this process proceeds slower; and if the body at this moment be attacked by fever, or convulsions; or, if there be a disposition to either, they may be aggravated, if present, or called into action, if predisposed by the condition of the gums.

1054. But the teething should not be chargeable with these contingencies; since, it is itself altogether a functional process, as much so as the formation of the bones in other parts of the system, or of any other parts belonging to the human body.

1055. There are two states of the constitution, which may render this period one of greater suffering, or even of danger, than where neither of these obtain—namely, where there is a decided and marked feebleness; and where there is evidence of a preternatural susceptibility to stimuli, though there may be the appearance of great vigour, and firmness of constitution. Now, should these states not be relieved, as they may be, by proper physical treatment, the act of teething may create much mischief

by its operation upon both the nervous and sanguiferous systems.

1056. We have, in the first part of this work, directed the best mode of management for these two different temperaments—the first should enjoy a pure and temperate atmosphere, both at home and abroad; strict attention to cleanliness; proper diet or nourishment, and especially that of a mother or nurse; well regulated clothing; so that they shall not suffer too much by the winter's cold; nor be too much oppressed by the summer's heat; and by well-directed exercise.

1057. The other must have its excess of irritability diminished by withdrawing every thing capable of fostering it; as too uniformly warm a temperature; by the abstraction of all unnecessary stimuli, from within; as that of animal food, spices, and liquors of every kind; by not sleeping too warm at night, or too long indulgence of bed in the morning; by a regular and efficient exercise; especially such as will agreeably occupy the mind, as well as employ all the muscles of the body, &c. (See Chap. on Exercise, p. 228.)

1058. We are, however, not to be understood as underrating the dangers attendant upon teething; and though we are not disposed to consider teething in itself a disease, we are, nevertheless, well aware it invites such as may not be present, and aggravates those absolutely existing; consequently, it must be considered as a period of great moment to the poor child. On this account it is every way important to point out both the extent of the influence of this act, as well as the numerous morbid sympathies to which it may give rise.

1059. We have already described the order in which the teeth make their appearance, (Book I. Chap. VIII. p. 202,) and pointed out the principal local phenomena which accompany this function; we shall now advert to some of the most common morbid sympathies by which it is attended. These are, 1st, eruptions on the skin; especially on the face and scalp; 2dly, tormina of the bowels, accompanied by a diarrhea with various-coloured stools; as green, very pale yellow, clay-coloured or a peculiar dark brown, which leaves a very permanent stain of a black colour upon the diaper; 3dly, spasms in various parts of the body, especially when passing from the waking to the sleeping state, or startings when asleep; 4thly, an increased or diminished quantity of urine, of va-

rious complexions, attended with great pain in making it, and sometimes a discharge resembling pus from the urethra; 5thly, partial palsy of the arms or legs; 6thly, cough and difficulty of breathing; 7thly, convulsions; 8thly, fever, &c. We once saw a case where violent croupy symptoms would appear whenever a tooth was about to be cut; and these would cease when the gums were scarified, or when the tooth would come through.

1060. As a general remark, it may be observed, that the children of the firmest constitutions, cut their teeth the earliest and the easiest—we must, however, admit exceptions to this rule. We have lately had under our care a child with a diseased spine, who cut a number of teeth before she was four months old. We have already noticed the departures from this rule, as well as the one which governs the order in which the teeth make their appearance. (See Book I. Chap. VIII. p. 202.)

1061. We have never distinctly perceived the advantage of very early dentition; for if it be a sign of more vigour of constitution, it, nevertheless, has, from this very cause, its penalties—hence, the frequency of fever, and other diseases of irritation.

1062. Much of the difficulty that attends painful dentition, may be removed, as already suggested in various parts of our first book, by a proper attention being paid to air, exercise, food, bowels, &c.; for if these be duly regulated, the system will be less disposed to morbid action; though the local symptoms, such as swelling, redness, and inflammation of the gums, be considerable: and if proper care be bestowed upon the mouth, the force of the latter symptoms may be very much abated.

1063. Indeed, this important part of parental and medical duty should never be lost sight of; the mother should carefully inspect the situation of the child's mouth, from time to time; and should she discover a swollen gum, she should immediately have it attended to, and not wait for constitutional symptoms to appear, before she employs proper aid for her child.

1064. Should she not be familiar with the appearances of the gums under distention and inflammation, she will, at least, be aware, that this condition is accompanied by slavering, heat of the mouth, &c.; which should give rise to the suspicion that the eruption of teeth is about to take place, if the age of the child will justify the supposition; or, if it have some teeth, that others are about to appear.

1065. However truly the slavering of children may denote the cutting of teeth in general, the rule is not infallible. We have seen children drivell largely at three months old, and continue to do so for months, without a single tooth making its appearance. From this circumstance we are led to believe this sympathetic affection may denote the formation and hardening of the tooth, as well as its being about to pierce the gum: for when the investing membrane of the tooth is put upon the stretch by the increased size, and hardening of this body, it may possess an unusual degree of irritability, or sensibility, and thus give rise to several of the premonitory symptoms of this operation, before the gums are at all acted upon by its presence—hence, the slavering, the frequent thrusting of the fingers in the mouth, &c.

1066. We have thought it proper to state this fact, because we have seen it produce much anxiety in parents; especially, if the subject be a first child; and it sometimes leads, at this moment, to the unnecessary expedient of having the gums of the child cut, before the lancet can well reach the crown of the tooth, however deep the incision may be made. We would, therefore, wish to spare the poor infant this unprofitable pain, since it is both unnecessary and unavailing; for we have seen the whole of the symptoms for which the operation was performed, continue with as much pertinacity, after this had been done, as before the gums were incised: therefore, this operation should not be had recourse to, without the advice of the physician.

1067. One of the most important indications to be fulfilled during teething, is to diminish the local irritation arising from the protruding tooth or teeth; and this should be attended to as early as may be, that as few constitutional symptoms may be provoked as possible.

1068. For this purpose, the gums should be carefully inspected; and the portions of them in which teeth are due, or even supposed to be due, should be well examined, that any change in their colour or size may be detected, in order that the only appropriate remedy may be applied in proper time. We have laid down (Book I. p. 193) the order which nature usually pursues in the performance of this process: therefore, a person acquainted with this, will rarely fail to detect the point from which the irritation proceeds.

1069. It must, however, be observed, that as far as our observations extend, the two lower teeth, when they are the first, (as they should be,) that make their appearance, rarely require to be cut; whereas, the upper frequently do, whether they have come at their regular period, or have anticipated the lower ones.

1070. If, upon the examination of the mouth, the gums are found to be swollen and inflamed, the imprisoned tooth or teeth should be set at liberty by cutting through them until the tooth is felt. This operation becomes the more necessary, when the local irritation has not been relieved by the natural means, namely, by a salivation, or slavering, or by a diarrhea; and, especially so, when, instead of a copious discharge of saliva, the mouth is found hot, dry, or clammy, and the bowels tardy. Under such circumstances, no time should be lost; the gums should be amply incised, and the child liberally purged, or we may expect some severe constitutional affection to follow; and if the child have been habituated to liberal feeding, and that of animal, or other stimulating food, it must be immediately withheld, and be confined to the breast milk alone, if it be not weaned; and, if weaned, it should be allowed nothing but milk, or milk and water sweetened.

1071. We are persuaded, were proper attention paid to the child at this time, many of the evils arising from dentition would be avoided; but, unfortunately, the friendly admonitions of nature are either neglected, or overlooked by the greater number of parents. The efforts which nature makes at this time are all calculated to prevent fever, or unnecessary local inflammation; accordingly, a great quantity of saliva is poured from the mouth by the irritated salivary glands, that the vessels of the part may be unloaded; the appetite of the child is diminished, that less food may be taken; and the general system is reduced by a copious spontaneous diarrhea. Thus, nature declares, in plain, but emphatic language, what she requires to aid her; nor ought she to speak in vain.

1072. To co-operate, then, with this beneficial intention, let the child be put upon a mild and moderate diet, as just directed; and on no account be permitted, either to eat or drink any thing which has a tendency to stimulate the system. Let its bowels be carefully watched, that they may not become confined, or, if

they be so, let this condition be removed, by an appropriate diet, or by gentle laxatives.

1073. We have found a liberal use of molasses, when there was a tendency to constipation, of great service: this may be employed in several ways, as may best suit the particular habits of the child. If it be confined to the breast altogether, it will, nevertheless, drink freely of this substance when mixed with water. If it feed in part, its milk, or its milk and water may be sweetened with it; or, if weaned, it may eat it on bread, or take it in any other practicable manner.

1074. Should the molasses not be sufficiently aperient, half an ounce of flake manna may be given in any victuals which may require sweetening; and should this prove insufficient, a like quantity may be given in a few hours more. But should the symptoms of irritation not be relieved by this plan, a little calomel may become necessary.

1075. But it must be evident, that little relief can be afforded by any general applications, so long as the membranous expansion over the tooth remains entire—therefore, nothing but a free incision to the crown of the tooth can relieve the little sufferer. And it is often not less wonderful than delightful, to witness the complete relief it affords. We have often observed excessive fever, and a threatening irritation, subside almost instantaneously, after cutting the gums.

1076. Notwithstanding the decided advantages resulting from cutting the gums, many are prejudiced against it, and will not, but with great reluctance, permit their children to undergo the operation, though they can cite no instance in which it has been attended with any mischievous consequence. The objections to cutting the gums, are, 1. That it is painful. Every body who has performed this operation with a proper instrument, and that in proper order, knows the contrary to this. In the first place, the gum is not at any time a part of exquisite sensibility; and, secondly, the speed with which the instrument passes through, and the decided relief it almost invariably affords, at once prevents any complaint on the part of the patient. This, however, may be considered but negative proof: if so, we have sometimes the most positive evidence that the operation cannot be painful, in the children themselves asking for it to be performed. Our

own children have repeatedly solicited this kind office at our hands.

1077. 2. It is said, it requires much judgment to perform this operation; for if it be done too soon, it will afford no relief, beside making the tooth cut with more difficulty, by its leaving a hard scar. As regards the degree of judgment necessary in this case, we should think it very limited indeed, if, upon inspecting the mouth, the person could not discover whether the gums were, or were not, altered from their natural condition; if they were, it is at once evident that the tooth is producing irritation or inflammation, by its pressure against its coverings, and, therefore, they should be cut through. And though the tooth cut upon may be yet remote from the surface, still the operation may be of the greatest possible advantage, by dividing the membrane, now severely put upon the stretch, and from which the whole irritation proceeds. When this membrane has been once divided, it never unites again; and though the crown of the tooth may not show itself for a long time, yet the irritation ceases, and the disturbance of the system is quieted from the moment the gum is divided.

1078. It is true, the gum will heal if the tooth be not very near—but this is of no consequence; as its healing offers no increase of difficulty to the passing tooth. Every body knows that the second teeth are always more easily cut than the first; yet these teeth have to pass through denser cicatrices than the first; as by the drawing or falling out of the first teeth, much larger wounds are made in the gums, consequently, larger scars are left after their healing.

1079. And, if the gums be not changed, still the operation of cutting may be highly advantageous, and should always be tried in severe cases, as the irritation sometimes begins as soon as the tooth itself begins to swell. We have many times had occasion to prove the truth of this; therefore, the objection to cutting the gums, lest the scars may do mischief, is without foundation.

1080. 3. Lancing the gums has been objected to, from a fear that cutting on them may do injury to the teeth, by producing caries, and thus be injurious to the set below. But this cannot happen:—1. Because if the lancet do touch the tooth, it can do it no injury, as its hard enamel, which it possesses before the tooth is about to be cut, will entirely protect it against such a consequence.

2. If it really did dispose the tooth, so touched, to become carious, it would do no injury to the teeth which are to succeed them, because they are not in contact with each other.

1081. The gums of such children as have not been lanced, are more disposed to be ulcerated, than those gums which have been cut.

1082. It may be well, however, to remark, that when this operation is to be performed, it should be done, with a bold hand and a sharp instrument; for if the tooth producing the irritation be not cut down to, so as to be distinctly felt by the lancet, the operation will be of little avail. The mere bleeding of the gum answers little or no purpose; and failing in the intention for which it was proposed, only brings the operation into discredit, besides prolonging the sufferings of the little patient.

1083. When the double teeth are about to be cut, they frequently show themselves, by one point piercing the gum—over the other portions of the tooth the gum remains, and is very tender: so much so is this the case sometimes, that the child will refuse every kind of food which may require chewing. In such case the gum should be freely cut across, and thus liberate the crown of the tooth.

1084. When a tooth which has been cut upon is remote from the surface, or the absorption of the gum goes on tardily, it will sometimes swell, and become very tender. When this is perceived, it should again be cut; and this, repeatedly, as often as new necessities may arise.

1085. The best mode of performing this operation, is by having the child held horizontally, with its head resting on the operator's knee—the hands of the child must be secured by the assistant, and the lower jaw depressed and held firmly; while the lancet is introduced to that part of the mouth where the pained gum is; the edge of the instrument is then made to traverse the tooth, by an incision sufficiently deep to reach the tooth, which must be so distinctly felt by the operator, as to satisfy him that nothing is left interposing between his lancet and the tooth. If the operation be properly performed, it gives no pain to the child—on the contrary, we have known them to cease crying, the instant the instrument penetrated the gum.

CHAPTER XIII.

OF THE DISEASES ARISING FROM DENTITION.

1086. Though we have perfectly agreed with Drs. Cullen Struve, and others, that teething in itself is no disease, yet we are aware that many affections of childhood are dependant upon this operation, either for their existence or augmentation. It would be unavailing, as well as injurious to the interests of society, did we attempt to shut our eyes against truths no less important than palpable. We, therefore, fearlessly entitle certain affections of the body at this period, “diseases of dentition.” We shall place the various complaints promiscuously, since they observe no regular order; nor is the same child liable to the whole; though we have occasionally seen two, three, or even more united. As eruptions of various kinds are very frequent, we shall commence our histories with an account of them.

SECT I.—*Of Eruptions.*

1087. It is notorious to common observation, that a child, for the first two years of its life, is especially liable to affections of the skin. It is not our design to notice them all, or to enter into any nosological arrangement of them—we merely intend, in this place, to speak of such as appear evidently to be connected, in some way or other, with dentition. We shall, therefore, first, notice,

A—*The Crusta Lactea, or the Milky Scall.*

1088. Dr. Good* supposes that this disease has acquired its name from the “milky, or rather the creamy appearance and consistency of the discharge.” But as we have never witnessed this “creamy appearance,” to justify the name, we should rather

* Study of Medicine, Vol. IV, p. 422.

suppose it has been given to it, from the circumstance of its generally appearing during lactation. At all events, it is a disease, we believe, exclusively belonging to infancy.”*

1089. This complaint begins sometimes sooner, and at other times later, as the disposition of the system to protrude the teeth, may exist; for we never remember to have seen it before dentition had commenced, nor after it was completed.

1090. It usually begins upon the cheek, or near the centre of the forehead; it first shows itself by an assemblage of small whitish pustules upon a very red surface: these gradually change to yellow, and brown, which presently break, and form a scab of greater or less density, from which proceeds an ichorous discharge. New pustules soon appear, which, after having undergone the change just spoken of, unite, as it were, with the former, and thus gradually travel to various parts of the body; but the face, scalp, and neck, are particularly liable to it. We have seen it cover nearly every part of the cuticular system. When it is even very general over the face, it is a little remarkable, that it never attacks either the nose, or the eyelids.

1091. There is a considerable variety in the intensity of this disease; it sometimes confines itself to very narrow limits; at others, it will be very extensive. We have seen it occupy the cheeks alone; at other times the forehead; but more frequently both. Sometimes the discharge is very acrid and profuse, leaving the surface of the skin both red and excoriated; at other times, the quantity discharged is small and mild, leaving the surface covered with a brownish dry scab.

1092. When the scab drops off, and does not reappear, the cuticle is found tender, red, a little elevated, and marked by fissures—this pellicle exfoliates, perhaps, several times. It is said, the skin never cracks into deep fissures, as after some other eruptions.

1093. This complaint is generally considered more troublesome than dangerous; yet we have seen two instances of death, evidently from this disease. In these cases, the itching was unceasing, during the day and night; the children were worn down

* We are well acquainted with a family of five children, who have all, in succession, had this complaint. It sometimes begins as early as the sixth month, and continues for twelve months, or even longer. We believe no attempt was made to relieve this formidable eruption in these cases.

from the want of rest, as well as exhausted from the excess of discharge. The eruption covered the whole body, and continued without amendment for many months, until the children were destroyed by the pertinacity of fever, and the profuseness of diarrhœa.

1094. Some, indeed, believe it only dangerous when its progress, or duration, is interfered with; and, therefore, deprecate every attempt at cure. We are, however, very far from this opinion, because we believe it to be founded in error. They ask, “Why should we meddle with a complaint which is evidently an effort of nature to get clear of a greater evil? Moreover, it is never a dangerous disease; nor does it ever leave unseemly marks; and if attempted to be dried up, will certainly prove injurious to the child.”

1095. We shall take the liberty of making a few remarks upon each of these positions. What evidence is there of this being a critical eruption, any more than convulsions are critical spasms, or that fever is an effort of nature to get clear of some noxious agent? Yet who, without an effort to control convulsions, will see a child expire, because they are produced by teething?—or who will look on, and see it consumed by fever, without attempting to afford relief, because it arises from the irritation of protruding teeth?

1096. As to its never being a dangerous disease, we have just stated that we have seen two instances of death from crusta lactea: but, suppose it were not dangerous—are we to suffer a poor child to bear with a loathsome and troublesome disease, without any attempt to remove it, because the disease will not, perhaps, terminate in death? Why should any of the non-fatal diseases of infancy be meddled with, since they will not kill, however troublesome they may be, or however interminable may be their duration?

1097. And because it takes its departure from the body after a troublesome visitation of many months, and leaves no unseemly scars, the poor infant is to be left to contend with affliction, and bear with its ravages, the whole of that period, merely because it will not leave its mark behind!

1098. It is asserted, when an attempt is made to cure this complaint, and we succeed in drying it up, that it has always proved decidedly injurious to the child.

1099. As this is a broad assertion, and one that is confidently believed by many, it will be well to examine into its truth, when a cure is attempted under proper circumstances.

1100. We will first inquire into the nature of the eruption. The skin, like every other organ of the body, has predispositions to disease, peculiar to its structure. These predispositions may, however, lay dormant for many years, or for ever, if the appropriate exciting cause be not applied, to call them into a state of actual disease. Before they are awakened into a palpable form, the system suffers neither inconvenience nor injury from this mere disposition to disease; but as soon as any circumstance shall convert this disposition into morbid action, the part thus acted upon will suffer in a degree proportionate to the extent and nature of this provoked disease. Therefore, in the case under consideration, the cutting of the teeth rouses the latent disposition into action; and the skin is now made to suffer under an active disease.

1101. This being certain, we must now inquire, is the eruption in question a consequence of a critical effort of the system to relieve some other portion of the body of an existing disease?—or, is it a mere consequence of some specific irritation? If the first part of this question be answered in the affirmative, it must then be shown that it has ever fulfilled the intention for which it was instituted. Can this be shown? We believe it cannot; for the local irritation in the mouth continues without abatement, however copious this eruption may be; it would, therefore, appear it was not intended to remove, or even to diminish the consequences arising from the protrusion of the teeth through the gums, or, if it were, it fails in the object; therefore, it must be contingent and not critical.

1102. But it may be said they are cause and effect, and in this relation they must be considered. Let this be admitted—their connexion will then stand thus: there is a disposition in the skin to crusta lactea, but this disposition requires some exciting cause to bring it into action; and this exciting cause is the irritation of teething; hence, this disease only appears during infancy, and even then rarely.

1103. But would it not seem extraordinary, that so loathsome and obstinate a disease as the one in question, should be instituted to relieve one of infinitely a milder grade? If this dis-

ease were a constant attendant upon teething, and teething were found to be less severe, and less hazardous, by its appearance, there might be some reason for inviting its presence, or fostering its continuance on the surface of the body; we, therefore, conclude, that, however intimately some affections, at the period of teething, may be connected with this process, the one we are now considering, must not be ranked among the number.

1104. The next question is, will the child suffer by the destruction of the crusta lactea? We unhesitatingly say, No; provided this be attempted in proper time, and in a proper manner—at least, this is the conclusion to which our own experience would lead us. If children have suffered from attempts to cure this loathsome eruption, the injury was altogether of an artificial kind; and made to arise from employing remedies for suddenly extinguishing the disease, after the system had become habituated to the waste from its surface. In attempts of this kind, we can readily believe, injury might be sustained; but this does not prove the critical nature of the disease in question; it only goes to show, that when a drain of this, or any other kind is established, it must not be suddenly suppressed.

1105. We see this well illustrated in ulcers of every kind, which are of long standing; but is there any one who would have hesitated to heal the fresh wounds, from which these sores originated? We think not—yet no one of real experience, would do this after they had become confirmed drains, without first establishing some compensating change in another part of the body; or so gradually have encroached upon the daily waste, as not to be perceived by the system. This is precisely the case with crusta lactea.

1106. For these reasons, we do not hesitate to attempt the relief of crusta lactea; especially, when we see it early, (that is, when it is confined to the cheeks and forehead of the child,) and that by the most prompt remedies. We direct the diminution of nourishment of every kind, and never permit any in which animal food enters. If the child be still at the breast, we request it to be nursed less frequently; and, sometimes, even confine the mother, or nurse, to a strictly milk and vegetable diet. If it be weaned, we forbid every stimulating article, and direct a reduc-

tion of its milk; confining it to thin arrow-root, with very little milk, or to the rennet whey.

1107. At the same time, we order small doses of sulphur, or sulphur and magnesia, to be given so frequently, and in such quantities, as shall keep the bowels loose, but not severely purged. After persevering in this plan for a week, we almost always find an abatement of redness at the margins of the scabs, and diminution of the itching.

1108. After having purged the bowels with sulphur, or sulphur and magnesia for a few days, as above directed, we then commence with small doses of calomel; as follows:—

R. Calom.	ppt. gr. x.
Creta.	ppt. ʒj. M. div. in xx par.

1109. One of these powders is directed to be given every morning and evening in a little molasses or syrup of any kind. Should they prove too purgative, from half a drop to a drop of laudanum is added to each dose. Should they not move the bowels sufficiently, an additional powder is ordered.

1110. We pursue this plan for at least a fortnight, before we make any local application; and, indeed, we do not apply them then, unless there be an abatement of the inflammation, and itching as above remarked. But should both these have happened, we commence with the calomel ointment,* but confine its application to some one spot of diseased surface. When this becomes relieved, we select a second, and so on until all are relieved. But let it be remembered that the calomel powders are continued through the whole course of the disease, and even for some time after, if the disease has been extensive and obstinate.

1111. When this plan is duly persevered in, it rarely fails to succeed; nor have we ever seen a single instance in which any untoward symptoms have arisen. We have sometimes substituted the citron ointment, reduced one-half, for the calomel ointment, when the latter seemed to have lost its effect. When the discharge is considerably diminished, and nothing appears to remain but the dry scabs, we almost always employ the tar oint-

* R.	Calom. ppt.	ʒij.	
	Cerate Simp.	ʒj.	
	Ess. Lemon.	gut. xx.	M.

ment instead of either of those just mentioned—this may be applied twice a day.

1112. The citron, as well as the tar ointment, must be had recourse to, as above directed, should that of the calomel not prove sufficient. Indeed, we believe it would always be best to finish with the tar ointment; as it seems to have a peculiar facility in removing the scabs, and allaying the itching, which last, by the by, is one of the most troublesome attendants upon the disease.

1113. Where the warm bath* can be had recourse to with convenience, it should be used two or three times a week, as it greatly promotes the efficacy of the other remedies; and, during the whole period of the attempt at cure, and, especially, in the beginning, when the discharge is both copious and acrid, the surrounding parts should be washed with a mild solution of fine soap, even three or four times a day. We have thought we have derived advantage where the discharge is free, from rubbing, or smearing the sound skin immediately surrounding the sores, after washing, with a little fresh hog's lard and bees'-wax melted together, to defend these parts against excoriation.

1114. This complaint is sometimes treacherous: after giving promise of a speedy departure, it will suddenly return, with renewed force. Dr. Strack† has recommended the decoction of the *viola tricolor*, Lin., or heart's ease, as a specific in this disease; but of this we can say nothing from our own experience. It might, however, in obstinate cases, be tried in conjunction with the remedies recommended above. He directs a handful of the fresh plant, or half a dram of the dried leaves to be boiled in half a pint of cow's milk, and this quantity given morning and evening. He affirms that for the first week, it greatly aggravates the complaint; but at the same time the urine acquires the odour of the urine of cats; and at the end of a fortnight the crusts begin to fall off, and the skin underneath appears clean. But when the usual smell of urine remains, the disease will generally be of long continuance. Prof. Selle, however, has affirmed that this plant is either noxious or inert.‡ We have never perceived

* We think that much advantage has been derived, by substituting a pretty strong infusion of flaxseed, for the plain warm water.

† Bateman's Synopsis, p. 153.

‡ Bateman's Synopsis. Ibid.

the smell spoken of by Dr. Strack. It may, however, be proper to observe, that in all our endeavours to relieve this complaint, as directed above, we have never witnessed any injury to arise from the attempt.*

B.—*Tooth Rashes.*

1115. Nothing declares the intimate connexion, or play of sympathies between the gums and skin during dentition, more than the number of eruptions to which it becomes liable at that period. Authors, (Underwood, Bateman, &c.) have described, and we have seen five or six different affections of the skin during the cutting of the teeth, all of which appear perfectly harmless, unless improperly treated. But as there are diseases of the system of a dangerous kind, which are accompanied with efflorescences, or pimples, much alarm is excited when any eruptions of analogous appearances show themselves upon the surface. On this account, it may be well to give a short account of them. For this purpose, we shall employ the descriptions of Dr. Willan, as they appear to us to be perfectly well marked.

1. *Strophulus Confertus, or Tooth Rash,*

1116. “Is an eruption of numerous papillæ, varying in their size, and appears on different parts of the body in infants, during dentition, and has thence been denominated the tooth rash. It is also termed, sometimes, the rank red gums.”

* We have had lately, (January, 1828,) a very severe and interesting case of the crusta lactea in a child of sixteen months old. It commenced when the child was eight months old in the common way, and spread gradually over the whole face, scalp, neck, body, and limbs. The child was feverish, restless, and almost constantly scratching, both day and night. A variety of remedies were tried before we saw it, without the slightest benefit. We commenced the cure by purges of sulphur and magnesia; confined the child to a diet of vegetable mucilages, as gum Arabic, tapioca, sago, rice jelly, &c. Ordered a warm flaxseed tea bath every other day. After a fortnight's use of the sulphur and magnesia, the calomel, as directed above, was given, together with a pretty strong infusion of the dulcamara. The sores were washed with the same infusion. After a perseverance in this plan for two months, an evident amendment was perceived in the nature and extent of the eruption. At this time we vaccinated the child; and this disease ran a regular, and satisfactory course. After the vaccine scab dropped off, the sores healed very rapidly, by the use of the tar ointment. In the course of another month, the child was perfectly well, and remains so to this time, (May, 1831.)

1117. "About the fourth or fifth month after birth, an eruption of this kind takes place, in most infants, on the cheeks, and sides of the nose, extending sometimes to the forehead and arms; at other times, though less frequently, to the trunk of the body."

1118. This affection differs a little from the red gum, by being less vivid in their appearance, the pimples smaller, and more crowded together. We have repeatedly known this species appear much later than is fixed by Dr. Willan; and their production seems evidently connected with the process of dentition; for when the process is retarded, this appearance is retarded: therefore, the time at which they show themselves, may be better fixed by saying, that when dentition begins, they commence. Every child, however, is not subject to it. It is rarely attended by constitutional symptoms, and, consequently, requires but little medical care. This complaint is usually of about a fortnight's continuance.

1119. We, however, almost always think it best, should there be any disturbance in the bowels, to give a pretty full dose of magnesia; to keep the skin clean and soft by washing with warm water, and to remove any irritating substance from the surface that is covered with the eruption, such as flannel or muslin, and substitute linen. When this is attended to, we think the course of the disease is shortened; for the pimples soon after are observed to fade, and to cast off their little shells, and, finally, disappear. A decided advantage is obtained, we think, by rubbing the part with a little dry flour after washing, when it becomes perfectly dry.

2. *Strophulus Intertinctus*, or Red Gum.

1120. This complaint is confined to early infancy, and especially to "the mouth," as it is called. Very few children escape this complaint; and most nurses are fond of seeing it—so much so, indeed, and so inevitable and useful do they consider its presence, that should any indisposition befall the child, and this eruption not have possession of the skin, it is at once attributed to the absence of the gum. With a view, then, to invite its appearance, the child is kept unusually warm, and some stimulating tea is given it, such as of sweet marjoram, saffron, catmint, &c., and after having been thus disciplined for a longer or a shorter

period, the poor child is but too frequently loaded with a heavy crop of "Red Gum."

1121. This eruption, however, seems connected, in some way or other, with a derangement of the stomach and bowels. This derangement may proceed, 1st, from the meconium not having been well purged off, or its being of an unusual acrid quality; 2dly, it may proceed from an acid state of the stomach, owing to feeding the child with improper food; or to its being made to receive too great a quantity of it; to some ill quality in the mother's milk, or a constitutional feebleness of stomach. Hence, this complaint is commonly ushered in by nausea, vomiting, or diarrhœa; 3dly, to the child being kept too warmly clad, or too warmly covered, especially its head, by which means it is obliged to breathe over and over again the same air; and is also thrown into a profuse perspiration. We have elsewhere noticed this injurious practice. (Book I. 135, par. 445.)

1122. This disease, for the most part, is rather provoked, than spontaneous; for children who are kept in a moderate temperature and who are dependent upon the breast for support, rarely have this disease, especially if the bowels have been well purged of the meconium, and the child naturally of a good constitution.

1123. "The red gum, or gown, occurs chiefly within the first two months after birth, and is characterized by papulæ of a vivid red colour, situated most commonly on the cheeks, fore-arms, and backs of the hands, but sometimes universally diffused. They are usually distinct from each other; but are mixed with red dots; or stigmata, and often with larger red patches, which have no elevation. Occasionally, a few small vesicles appear on the hands and feet; but these soon desiccate without breaking."*

1124. This disease, under ordinary circumstances, requires little or no medical treatment. It is, nevertheless, proper that due attention be paid to cleanliness, by daily washing with warm water; and, also, if errors have been committed in either of the ways mentioned above, they should be immediately rectified. The bowels should be gently opened by small doses of calcined magnesia; and, if pain attend, a half or whole drop of laudanum may be given. The cold bath, improperly used, or even a strong current of cold air, may do mischief at this time. And, should

* Bateman.

this eruption be repelled from the skin, alarming symptoms may immediately ensue; such as great oppression and difficulty of breathing, drowsiness, or incessant crying, and spasmodic twitchings. The whole surface of the body is now pale; the pimples have all disappeared; the child becomes blue around the mouth; it refuses the breast; and stretches itself out stiff its whole length, and then becomes suddenly relaxed; cold skin, &c.

1125. The best remedy, under such circumstances, is the warm bath, in which the child should be immediately placed, and kept until its skin acquire warmth; it should then be well dried and wrapped up in warm flannel—at the same time some pretty strong sweet marjoram tea should be given, or any other mild stimulant of the kind. Dr. Underwood recommends two or three drops, three or four times a day, of the compound spirit of ammonia, and a blister between the shoulders. We have never seen either of these necessary.

3. *Strophulus Albidus*, or *White Gum*.

1126. “This eruption consists of numerous, minute, hard, whitish specks, a little elevated, and surrounded by very slight redness. These specks, or papulæ, when their tops are removed, do not discharge any fluid; they appear chiefly on the face, neck, and breast, and continue a long time.”

1127. This affection rarely requires any medical treatment, unless it have been driven from the surface by a current of cold air, or the application of cold water. It is rarely ever attended with any constitutional irritation, and, therefore, while it preserves its mild form, deserves but little notice. But should mismanagement, or any other cause, have driven it suddenly from the surface, it may, like the red gum, (*strophulus intertinctus*, which see,) be productive of inconvenience, or even of danger, and must, when this happens, be treated like that affection when it has been repelled. It is, however, proper in the species under consideration, that due attention should be paid to keep the skin free from all impurities, by washing with warm water.

1128. Dr. Willan describes a variety of this complaint, which sometimes becomes very troublesome, though never dangerous. He declares it to be both painful and obstinate, yet requires no particular treatment, except that which is proper in all these

affections; namely, cleanliness. We do not remember ever to have seen this variety as described by both him and Bateman.

4. *Strophulus Volaticus.*

1129. "This variety is characterized by small, circular patches, or clusters, of papulæ, which appear successively on different parts of the body. The number of papulæ in each cluster is from three to twelve; both the papulæ and their interstices are of a high red colour. These patches continue red, with a little heat and itching for about four days, when they turn brown, and begin to exfoliate. The eruption is, in many cases, limited to two or three patches on the arms or cheeks. In some instances, however, one patch declines, another appears at a small distance from it, and in this manner the complaint spreads gradually over the face, body, and limbs, not terminating in less than three or four weeks. During this time the child has usually a quick pulse, and a white tongue, and is uneasy and fretful."

1130. We have several times seen this complaint; but it has always, so far as we can recollect, appeared later than is usually described, or not until the child be about to cut the jaw teeth, or little molares. We have found it occasionally very troublesome; and sometimes to require a treatment similar to crusta lactea, of which, in this situation, it has been considered, by some, as a variety.

1131. As this complaint is usually attended by some derangement of the system, and particularly the bowels, attention should be paid to them. They must be treated agreeably to the state of the system; if fever attend, the diet should be diminished, if it be only milk—no animal food should be permitted in any form. The bowels should be purged with magnesia; and the calomel, and ointments used as directed for crusta lactea. (1107.) Should diarrhœa attend, it must be managed as directed for that complaint.

5. *Strophulus Candidus.*

1132. "In this form of strophulus, the papulæ are larger than in the foregoing species. They have no inflammation around their base, and their surface is very smooth and shining, so that they appear to be of a lighter colour than the adjoining cuticle.

They are diffused at a considerable distance from each other, over the loins, shoulders, and upper part of the arms: I have not observed them in any other situation."

1133. "This eruption affects infants above a year old, in the latter periods of dentition: it likewise occurs during the state of convalescence after fevers, and inflammation of the bowels and lungs. The papulæ continue hard and elevated for about a week, then gradually subside and disappear."

1134. This affection requires no medical treatment—the whole attention must be paid to the state of the gums.

Sore Ears.

1135. Children, during dentition, very frequently have slight pustules form behind the ears, which soon become ulcerous: or look, oftentimes, like a superficial excoriation. This condition of the ears also takes place, before any suspicion of teeth being the cause can be entertained, especially in very lusty children.

1136. There are few eruptions which attack an infant more decidedly cherished than that producing sore ears; hence, what was but in appearance a very slight excoriation in the beginning, and which might readily have been healed by proper and frequent washing with warm milk and water, or fine soap and water, is permitted to degenerate into a painful, tedious, and oftentimes offensive ulcer: as its first appearance was welcomed, so is its continuance perpetuated, by various stimulating things, under the specious pretext of its being an important drain for the noxious humours of the body.

1137. The sores being thus encouraged, eventually discharge a large quantity of both pus and serum: in a word, they are converted into "issues," which it is declared, on all hands, it will not do to dry up. This popular prejudice perpetuates an evil, which should never have been permitted to have existed—for a sore is an evil, be it placed where it may, unless it be *distinctly critical*, which we deny this to be. The reasoning we employed when speaking of the crusta lactea, will strictly apply here; and the motives which led us to the use of remedies in that complaint, would influence in this—therefore, we never hesitate a moment to set about so desirable an end, nor have we ever witnessed, when properly managed, the slightest inconvenience

to follow the practice. Dr. Good says, "The discharge is often peculiarly offensive;" "it cannot be checked too soon; for if it continue for a few weeks, or, perhaps, even less, it may acquire a habit, the suppression of which may run the risk of superinducing some worse disease than itself, as dyspepsia, diarrhœa, or convulsions."*

1138. We commence the treatment of this affection by regulating the diet of the child, if this be necessary—that is, if it be in the habit of using animal food in any form, we forbid its farther employment, and confine it to vegetables and milk; as rice, arrow-root, or sago: either of which can be taken with milk, or with a little sugar, without the milk.

1139. The bowels must also be purged with small doses of calomel; that is, a grain or half a grain every morning and evening, as the child may be older or younger, or it may affect the bowels.

The sores themselves must be kept perfectly clean by frequent washing with soap and water, or milk and water. During this time it would be well for the child to do without a cap, as it keeps the parts too warm, as well as sticks to the sores when in contact with them. Should the child be in the habit of scratching the parts, mufflers should be put upon its hands. A piece of fine rag spread with simple cerate; that is, a cerate composed of a little bees' wax and sweet oil melted together; or, what is better, fresh hog's lard, instead of the sweet oil. When the child is placed for sleep, let it lie as much as possible upon its back, that the sore need not be kept too warm.

1140. Should the sores be very much inflamed, and very irritable, a soft poultice of bread and milk should be applied, confined in fine linen rags, every four or five hours, until these symptoms be abated. The poulticing should not be continued longer than to subdue the inflammation; for, if it be, it invites a great many little pustular bodies, even on the margin of the sound skin, which break, and increase the sore surface. Therefore the instant this is observed, the poultice should be laid aside.

1141. After preparing the body, as well as the parts in this manner, which may occupy a week, or even more, according to the extent of surface involved, the length of time the disease has continued, and the degree of inflammation present, we may com-

* Study of Med. Am. Ed. Vol. 2d, p. 211.

mence with the calomel ointment. (1110.) This must be smeared upon the external margins of the sores, as well as upon the sound skin itself, twice a day, taking care to wash the parts, as before directed, before each application of the ointment, and gradually encroaching upon the sores every day, by a more extensive application of the ointment. This remedy will rarely fail to destroy the farther disposition to ulceration, and pretty quickly alter the action of the parts, so as to make them discharge a healthy pus, instead of the ichor and sanies to which they have been so long accustomed.

1142. When the parts have become healed, but covered with a scab, and especially if this be attended with itching, the tar ointment should be immediately substituted.

CHAPTER XIV.

OF TONGUE-TIE.

1143. So far as we recollect, we have not met with any writer who has distinguished between the accidental fetter which is occasionally imposed upon the frænum of the tongue, and the original conformation of the frænum, which renders the tongue too short; but this difference should be carefully noted, as very serious consequences may result from mistaking one for the other. We shall, therefore, notice both these conditions of the frænum of the tongue.

1. *Of the adventitious tying of the Tongue.*

1144. Very frequently there is attached to the frænum of the tongues of new-born children, a nearly transparent, whitish membrane, which pursues the natural frænum through its whole course, continues beyond the point where the frænum stops, and terminates near the extremity of the tongue itself; so that the tongue is tied down, as it were, to its proper bed.

1145. In consequence of this disposition of the frænum, the child cannot elevate the tongue or protrude it beyond the lisp:

and in its attempts to suck, it cannot apply it with sufficient force or certainty to the nipple, to make a complete exhaustion; therefore, it can suck but imperfectly; and this is accompanied by a clucking kind of noise. Whenever this is observed, the mouth should be examined, and it will almost always be found in the situation just described; but not necessarily, as there may be clucking without this membrane; but this membrane, we believe, is never without the clucking.

1146. This membrane is easily discovered by provoking the child to cry, or by elevating the point of the tongue by the extremity of the little finger. In making the attempt to raise the tongue, the child is almost sure to cry; and then this membrane is readily discovered, as it is now fully upon the stretch.

1147. This defect is easily remedied. It should be done in the following manner: Let the child be laid across the lap of the nurse, with its face towards a proper light, and the operator stand behind the head, so that he does not intercept the light. The chin of the child must be gently depressed by the forefinger of the nurse. When the chin is thus depressed, the little finger of the left hand of the operator, must be insinuated between the side of the tongue near its tip, and the inner corresponding portion of the jaw until it can lift up the point of the tongue; which being done, the membrane is immediately brought into view, and upon the stretch; or, should the child now begin to cry, as it almost always does, the operator can easily place his finger under the tongue, and keep this false frænum tense, while, by a single stroke directly across it by a sharp gum lancet, he divides it to the true frænum: the operation is then finished. We have never known it necessary to repeat this operation. The incision through the membrane, never yields more than a small drop of blood; no hemorrhage can ensue, as this tissue is but very slightly vascular.

2. Original Conformation of the Frænum, rendering the Tongue too Short.

1148. In this species of "tongue-tie," the difficulty to the child's sucking, accompanied by the clucking noise just mentioned, arises from the frænum proper, being unusually fleshy, and carried too far towards the extremity of the tongue; so that

there is but a small portion, or distance, from the insertion of the frænum, and the outer extremity, or tip of this organ.

1149. In this case, the inconveniences to the child, are precisely of the same kind as in the other; but not, so far as we have observed, to the same extent: indeed, we have occasionally seen both combined. When the frænum proper is thus conformed, we never venture to do any thing; 1st, because we have never found it absolutely necessary; as it never so far interferes with sucking as to prevent it—the clucking noise, and the display of a little temper on the part of the child, in not receiving its nourishment as fast as it desires, are the only inconveniences attending it; 2dly, because, it is extremely doubtful whether the operation has ever been useful; but it is certain, that it has often been troublesome, sometimes dangerous, and occasionally fatal. Bleeding to a fatal extent, swallowing the tongue, and convulsions, have followed the operation; we, therefore, with our present views, can never recommend it.

Swallowing of the Tongue, and Hemorrhage.

1150. We have often heard of, but we never have seen, a case of either swallowing the tongue, or of hemorrhage, from cutting it. Dr. Underwood speaks doubtfully upon this subject: he says, “The occasion of this accident, *it has been said*, is cutting too deep in dividing the frænum. I have here to notice its symptoms, and remedy. The former are those usually attending strangulation, and come on suddenly, and without any probable cause, but that of the tongue being cut; but to which they are seldom attributed by those who are strangers to the complaint. The infant appears greatly agitated; the face turns black; and, unless these symptoms soon disappear, the child goes off in a convulsion. But if they are presently removed, the infant is as suddenly well; though they generally return again, and have, in several instances, proved fatal.

1151. “Mons. Petit, (Mem. de l’Acad. des Sciences,) has, perhaps, the credit of discovering the true cause of the complaint. The remedy consists in nothing more than in bringing the tongue into its proper place, and if the infant be suckled, putting it immediately to the breast, will give the tongue its natural direction. Should the child be brought up by hand, the tongue should be watched for some time, at least until the bleeding be stopped;

the complaint taking place only in consequence of that being considerable, so as to become an inducement to the infant to continue sucking at the part."

1152. "When the sublingual veins are actually wounded, the danger, it has been said, is considerable; and it is to M. Petit, that we are again indebted for the best contrivance for suppressing this hemorrhage. The means consist only of a piece of ivory, in the form of a short fork; the prongs of which should be so placed as to press against the apertures in the veins, and the other end against the inside of the lower jaw, and should, therefore, be broad, and somewhat convex, that it may keep its place."

1153. We are sorry we cannot give any thing more satisfactory upon this subject, than what we have just detailed. If it be true, as Dr. Underwood asserts, that swallowing the tongue arises only from too much blood flowing after cutting it, it must be of very rare occurrence. In this country, we have never heard of an accident from cutting the tongue; and we are sure that none can follow, if the case be a proper one for this operation, or, if it be properly performed.

1154. It strikes us, there must be something very reprehensible, when hemorrhage to any extent occurs, either in the mode of operating, or in selecting the case for it. It is generally recommended to employ scissors for this purpose; to these we have objected for many years. We never employed them but once, and then found them so extremely inconvenient, that we determined to use them no more. We substituted the common gum lancet, as directed above; and we have every reason to be satisfied with it for this purpose. We have already pointed out the kind of cases we judge proper for this operation; in such no accident can occur, unless the most perfect mal-adroitness accompany the operation.

1155. We have said, we have never seen a case of swallowing the tongue; that is, we were never present to observe the phenomena such an accident would present—but we were called to see a child who was in the habit of doing this; it was, however, relieved before we arrived. The nurse informed us, the child in question would swallow it several times a day, if not watched. She always relieved it by the handle of a tea-spoon pressed against the tongue, and drawing it forward. This child, we know, never had had any thing done to its tongue.

1156. In case of hemorrhage, we believe filling the part beneath the tongue with dry lint, and holding it there some time, would answer better than Mons. Petit's contrivances, provided it be not an artery. We have seen, within a few days, a bleeding from the frænum, occasioned by a cut with a piece of tin with which the child had been playing: the artery, in this case, was taken up, by Dr. J. R. Barton, with great skill, and as much success.

CHAPTER XV.

OF BLEEDING FROM THE NAVEL-STRING.

1157. This accident cannot properly be called a disease; yet it is of importance to understand its management when it occurs, that it may not prove injurious or fatal to the child. Whatever reasoning, ingenuity may employ to prove, that a ligature upon the cord of a new-born child is unnecessary, experience shows, it is sometimes highly useful; consequently, since if properly applied it can never do harm, it should always be employed.

1158. Those who are well acquainted with midwifery, know, that sometimes a bleeding from this part takes place, hours after it has been carefully secured; therefore, this part should occasionally be watched, lest a bleeding ensue, and weaken the child very much. We have never known an instance of death from this cause, though we have seen children very much exhausted by it.

1159. This hemorrhage arises from the substance and vessels of the navel-string contracting so as to be no longer compressed by the ligature: this, however, only happens so far as our observations go, from two causes; namely, 1st, where the cord has been carelessly tied, or tied with improper substances; in neither of which, sufficient compression is made upon the vessels, though at the moment of cutting the cord they did not bleed; 2dly, where the cord is unusually large; in this case, it is oftentimes very difficult to make sufficient pressure upon the vessels, however proper

the materials of the ligature may be, or, however well it may have been applied; for the cord shrinks in such cases so much, as almost to leave the ligature without pressure.

1160. We once witnessed a bleeding from the cord, which had nearly proved fatal, where the vessels under the ligature were completely compressed; therefore, there was no blame to be attached to the mode of tying, or to the substance of which the ligature was made. As this case was a little singular, we will relate it:—

1161. We were sent for, in great haste, to see a child who was said to be bleeding to death. When we arrived, we found it extremely pale, and nearly exhausted by a bleeding from the cord. The child was three days old; it had been bleeding more than an hour. The gentleman who had delivered the child, could not be found at the moment he was sent for, but arrived immediately after we had got the cord exposed.

1162. Upon examining its extremity, not a drop of blood was seen to issue from it, but a stream was observed to flow over the child's belly. The whole cord was now unwrapped, and the blood was seen to issue from the side of the cord, about an inch below the tying. Upon examining this part carefully, it was found that the vein was varicose, and had ulcerated—from this ulceration the blood flowed. A new ligature was applied below the ulceration, the bleeding stopped instantly, and the child recovered. We will not pretend to account for the blood of the child forcing its way into the umbilical vein after the cord had been cut; we only relate the fact, which suggests the following practical cautions: never to apply a ligature above a varicose portion of the cord, if it be possible to apply one below; lest a similar accident may occur.

1163. When bleeding takes place from the extremity of the cord, 1st, let a second ligature be applied below the original one, taking great care that the second one shall not cut through the cord when drawn very tightly; 2dly, that the ligature be drawn sufficiently tight to compress the vessels. To prevent the first accident happening, do not let the ligature be of thread, hard twisted together, especially the homespun thread; and to ensure the second, let it be a portion of a skein of fine linen thread; for neither tape, bobbing, nor cotton thread, can be relied on for this purpose.

CHAPTER XVI.

OF ULCERATION, OR IMPERFECT HEALING OF THE NAVEL.

1164. The umbilical cord separates from the umbilicus, from the fifth to the tenth day; and though this is a process altogether of the system of the child, yet we are occasionally obliged to interfere, that the separation may be entire, or the healing perfect.

1165. The cord sometimes remains attached by a filament, for several days after the usual time of separation: when this is observed, it should be separated by dividing the connexion by a pair of scissors. This is the simplest impediment to healing: this process may fail by the part shooting up a kind of fungus, which discharges a purulent matter, and is sometimes offensive, This condition of the navel always excites alarm, though there is no positive danger; the only disadvantage is, that the part will not spontaneously heal, nor the discharge stop.

1166. This excrescence will be found in one of three conditions: 1st, the navel may exhibit an elevated ulceration of its whole surface; 2dly, it may form a kind of button with narrow base or pedicle; 3dly, this button may have a broad base; each of which will require a little difference in management.

Treatment in the First Situation.

1167. This condition of the navel will be readily healed by sprinkling it with white lead, or finely powdered Aleppo galls, or calomel. All these substances act as escharotics; when either is applied, the surface immediately below becomes killed; therefore, time must be given for the slough to come off. When it separates itself, a fresh portion must be applied, and so on until the part is entirely healed.

Treatment in the Second Situation.

1168. A dark red round tumour may be discovered, within the cavity, formed by the retiring of the navel; this, when pressed out, will have a foot stalk, and much resembles a cherry attached to its stem. All that is necessary here, is to pass a ligature round it, and sufficiently tightened. It will soon drop off, and occasion no pain. It sometimes may not immediately heal after the removal of the top, as the remaining portion may again shoot up a new product—if this happen, the remedies named for the first condition will quickly relieve it.

Treatment in the Third Situation.

1169. For this condition, a ligature cannot be applied, as its base is broad—we are, therefore, obliged to depend upon escharotics, as in the first case. It, however, will not always yield to the already suggested remedies: when this is the case, we have been a few times obliged to have recourse to a pretty strong solution of the nitrate of silver; this must be applied by means of a camel hair pencil, and repeated until the part heals. We have never known this application give pain; unless it were too liberally used, and made to act upon the sound skin.

CHAPTER XVII.

OF HYDROCELE.

1170. This affection of the scrotum, resembles that of adults; most probably, in many cases, the child is born with it; it is, however, not generally noticed until four or five days, and sometimes even longer after birth. It always excites a good deal of alarm; and it is proper it should, as it always deserves attention; not so much for itself, since it is of easy management, as because a rupture at the part, resembles it.

1171. It may be distinguished from hernia, by its equal dis-

tention; by its transparency; by not being increased by the crying of the infant; its want of sensibility on handling of it, and by not retiring by pressure. So far as we have seen, the water is confined to one side of the scrotum; it may, however, be occasionally in both. We have several times seen the tumour as large as a small hen's egg. This complaint is not always con-nate; we have seen it occur several months after birth; and one case several years. It is never productive of inconvenience to the child, yet it demands attention.

1172. It has always yielded to the application of cold water, though we have occasionally found it obstinate. This is, especially, the case, perhaps, when it does not take place for a long time after birth—at least, it was so in an instance, in which this disease did not appear until after the child was three years old. In this case, the water was steadily applied morning and evening for several weeks, without any apparent amendment. The child was now confined to a milk and vegetable diet; and took daily, or every other day, ten grains of cream of tartar, and six of jalap. In this way he was purged pretty freely for a fortnight; the water was, however, continued during the whole of this time, and in a fortnight more, the whole tumour disappeared. nor has the child had any return.

1173. The best mode, we believe, to use the water, is to pour it from a height, *pleno rivo* upon the part. Two quarts, at least, of water should thus be let fall, morning and evening, through the spout of a tea-kettle.

CHAPTER XVIII.

OF UMBILICAL HERNIA.

1174. We have adverted to the cause of hernia, in several places, but particularly in Book I. p. 80, under the head of Belly band; as well as at p. 259, under the head of exercise. When treating of the application of the belly band, we gave it as our opinion, that the too tight application of this bandage was no unfrequent cause of this complaint, when, from the conformation

of the parts, there was a disposition to it. We then suggested some cautions, to which we must beg leave to refer.

1175. It may be proper to observe, that the nurse is always blamed when this accident happens, but not with sufficient reason; for we do not believe it to be in her power always, nay, we may say it is very rarely so, to prevent it; for, in general, it is owing to a natural defect of the part. Yet a prudent care is essential to the good health of the child. It must be remarked, that children who cry a great deal, and who have had very large umbilical cords, are more subject to it than others.

1176. It would be well for the nurse to examine this part from time to time after the separation of the cord, especially while the child is crying. Should she discover any pouting out at this part, she should immediately inform the parents of the circumstance, and not reprehensibly conceal it, from a fear she may be blamed for the accident.

1177. Much important time is sometimes lost by this concealment; yet it is expecting rather too much moral courage in the nurse to discover it, as she is sure to call the blame upon herself, by her candour. On this account, it is every way important to be understood, how seldom, and how little agency the nurse has in its production. It is but justice to that class of people to declare the truth upon this point.

1178. As soon as this disease is discovered, it would be well to attempt to remedy it; 1st, because we are persuaded the best chance of a cure is, when it is taken as early as possible, that the passage for the gut may not be confirmed by the frequent appearance of this part in the opening, which will be sure to be the case whenever the child cries, coughs, sneezes, or even goes to stool, if the part be not protected by a counter pressure:—2dly, because at this early period there is a natural disposition in the hole through which the gut is forced to obliterate itself.

1179. Dr. Underwood, and others, recommended at first, compression by straps of adhesive plaster: this plan has not always succeeded with us, though it sometimes does. But we never fail to cure it, by the application of Dr. Hull's umbilical truss. This is simple in its construction, correct in its principles, and gives but very little trouble in its action.

CHAPTER XIX.

OF THE INGUINAL HERNIA.

1180. This complaint is not so frequent as the umbilical, but, generally speaking, it is of more difficult management, and of more serious consequence. This complaint consists of a descent of a portion of intestine or omentum, into the scrotum: it may exist before birth, or may take place soon after.

1181. This complaint may be suspected, whenever the scrotum, especially on one side, is more than usually large; and it may be detected by the tumour being removed by pressure, and by the testicle not being discoverable. This disease may, however, take place at any period of life, but especially during its most active stages.

1182. Dr. Underwood says, the "hubonocèle may be safely left without a bandage, especially as the cold bath alone generally cures it, when happening to children before they go alone." We are always sorry when we are obliged to differ with this respectable author; and the complaint under consideration, is one of the instances, in which we are obliged to oppose the experience of Dr. Physick, as well as our own, to what he has advanced in the quotation just mentioned.

1183. Dr. Physick advises, without reserve, the application of a properly constructed truss to the part, whenever the disease may be discovered; and considers it unsafe to permit the child to do without one: especially as the disease, if it be properly managed by a well adjusted truss, is permanently cured; but if it be permitted to continue without such application, it may become strangulated, or the disposition of the hole to contract, through which the gut descends, is lost, and thus the child ever continues to suffer under this complaint.

1184. We would, therefore, advise, in conformity with an experience at once so extensive and valuable, as that of Dr. Physick, that recourse be immediately had to the only certain remedy. In using a truss, however, for this purpose, much care is required; 1st, that the machine be properly constructed, for the

end proposed; and, 2dly, that it be properly adjusted to the parts, that the end may be ensured; 3dly, that the protruded parts be carefully replaced before it is applied; 4thly, that it be worn day and night.

CHAPTER XX.

ABSCESS OF THE HIP JOINT.

1185. The commencement of inflammation in the hip joint, is not perceived as early as would be useful to the patient; or, if some alteration in the health and vigour of a limb be observed, it is not always attended to sufficiently early. This complaint is most frequent with children; the variety of little injuries which they must almost necessarily sustain in the exercise of their juvenile sports, misleads, very often, even anxious and watchful parents, when any slight complaint is made of pain, uneasiness, stiffness, or even diminished ability to walk; since they are all in their turns attributed to a bruise, a fall, or a wrench, which they suppose will quickly pass away by rest.

1186. Even after the disease has progressed some time, and an evident weakness is observed in the limb, by its being favoured at the expense of the other; when pain is felt from motion, and there is a disposition to fall from slighter causes than usual; and even when the points of the toes look more inward, or outward than natural; the true nature of this disease is not suspected, as there is no fixed pain in the hip joint, not even upon pretty hard pressure—indeed, the friends of the patient are constantly misled by his declaring he feels no pain, except in the knee.

1187. If the two limbs be compared, even before the disease has proceeded far, the diseased one will be found rather longer than the other. After awhile, the natural convexity of the hip is lost; and when the patient walks, it is found that the greater part of the weight of the body is sustained by the sound limb, and a limping commences. Though the patient locates his incon-

venience in the knee, because he there alone very often feels the pain, yet this part will bear pressure, and motion, without experiencing the least inconvenience; but not so always, the hip joint; for if the sensations of the patient be carefully examined during the motions imposed upon the knee joint, such as bending it, and straightening of it, it will be found he experiences inconvenience in the joint of the hip.

1188. This is the commencement of inflammation of the hip joint; and if it be not controlled in due time, it runs on to supuration. An abscess forms, which opens, and gives issue to an unhealthy pus; the bones at the bottom of the abscess but too frequently become carious; hectic fever ensues; and, after suffering, of a longer or shorter duration, the patient dies exhausted, by discharges and sufferings.

1189. For remedies to be useful in this disease, they should be early applied, regularly persevered in, and the most perfect rest enjoined upon the patient: with such treatment, the disease may frequently be cured; but if the disease have been neglected in its early stage; the remedies but partially administered; and the patient permitted to use exercise, the disease then becomes as painful as hopeless.

1190. The cure must be attempted, by bleeding, leeching, cupping, purging, low diet and rest. We have seen three instances of entire restoration where this plan was completely tried; and we have witnessed more than twice that number, terminate in incurable lameness; fistulous openings with never-ceasing discharges of ill-digested pus, and death, from hectic, will follow.

1191. From pain being seated in the knee, this complaint is always mistaken for rheumatism, or some other local affection of this part; and to it are all the remedial powers addressed—we need not say how unavailingly.

1192. To Dr. Physick we are indebted for the proper mode of treating this affection; and to his happy genius are hundreds under obligation, who have suffered from it, for the preservation of their limbs, and for the enjoyment of life. It was he who first suggested constant purging, and entire rest; and to which, this formidable disease so often yields, when tried under proper circumstances. Valuable as this plan is, it must be confessed to be one of difficult execution; but we know, from experience, it is not impracticable; and from the same experience, we know it to

be successful. Who, then, would hesitate to enforce a plan, that might save a lovely female from an incurable lameness, or a favourite son from a lingering death!

1193. But let us be a little more particular, in developing the plan just spoken of. The child must abstain from all animal food or broths; he must be laid prostrate upon his bed or mattress, and this without exercising the limb, but as little as possible; he must be bled freely from the arm if the pulse be active, or leeches upon the hip, if the bleeding be not indicated: these must be repeated in proportion to pain, or fever; if either come on. The bowels must be purged daily, or every other day, by the exhibition of cream of tartar and jalap, in doses suited to the age of the patient, and this persevered in until amendment is obvious, or the cure completed. Under this apparently weakening plan, it is astonishing, sometimes, to see how health and strength improve. Where it is impossible to confine the patient, much advantage is found from the curved splint, made to fit the hip and thigh. The ingenious Mr. William Rush, (ship-carver,) is very successful in adapting the splint to the shape of the parts concerned. To show how easily, and commonly, this case is mistaken for rheumatism, we will relate one case, of several of similar kind. In June, 1823, we were requested to visit Miss ———, aged fourteen; she was from the country; she was there treated for a rheumatism in the knee, by stimulating, and other applications, for some time. At the request of a relation residing in the city, she was brought down for farther advice. We soon discovered the complaint to be a hip disease; and we wrote a letter of instructions for its treatment. After our taking leave, it was agreed she should remain in town to put the proposed plan in execution, and she, accordingly, commenced forthwith, and this with as much perseverance as success. She was bled and leeches twice; purged every day, or every other day, at farthest, with jalap and cream of tartar; confined closely to her bed; and observed the most abstemious diet, for two months; at the end of which time, we had the pleasure to return her to her anxious parent perfectly restored; and up to this time remains well. But every case is not so quickly relieved. Dr. Physick and myself had a very desperate case lately, which required six or seven months to cure,* but which was in this

* That is, the inflammation of the joint was subdued, and the threatening

time happily effected. The splint was modelled to the shape of the leg, three times, as it acquired length during the progress of the cure.

CHAPTER XXI.

ABSCESS WITHIN THE EAR.

1194. Children, after they are six months old, are sometimes found to cry violently, and toss their little heads from side to side, expressing thereby the greatest agony. Not being able to point out the seat of pain, it is variously located by the parent or by the practitioner. It will sometimes stop crying very suddenly, and fall into a sound sleep, from which it will be roused by renewed torture. This pain is not generally attended by any disturbance of the system: fever seldom attends, but when it does, it is sometimes very high, and even attended by delirium. It is generally mistaken for colic, or belly-ache.

1195. It may, however, readily be distinguished from this affection, by its not being accompanied by drawing up of the legs and thighs; by no flatus rumbling in the bowels, and by the hands and feet not being cold, or by the pain not being relieved by remedies addressed to these parts. We have always reason to suspect this pain to arise from an abcess forming in the ear, when the child throws its head backward and forward, and indeed in all directions, during the paroxysms of pain; when it is found to lie on one side easier than the other; when laudanum procures but temporary relief; and when, upon pressing the ear with the point of the finger placed against the lower portion of the external meatus, it complains; and, above all, when the abcess can be discovered by looking into the ear; this, however, but seldom happens.

1196. We have witnessed this affection so frequently, and have been so often alarmed by it, that we always apply remedies

symptoms had ceased. But as the limb was very much contracted, it required the constant application of the splint for a number of months more before it became straight. This young lady now walks without much difficulty, though the disease was for a long time a very serious one.

to the ears, when we have satisfied ourselves the pain is not in the bowels, by the absence of the symptoms noticed above, nor in the head itself, by the absence of all fever, or derangement of stomach.

1197. When we suspect the ear to be in fault, and have been called to the child in the commencement of pain, we almost invariably order a few leeches to be applied under that ear of which the child complains, if pressed, as above directed. We also direct a little laudanum on lint pressed gently into the ear, and this repeated as occasion may require. Should these fail to afford relief, we advise a blister to be applied immediately under the ear, and purge the child pretty briskly.

1198. This plan sometimes succeeds to admiration, and we believe it would oftener do so, were the remedies applied sufficiently early: but unfortunately, the time for useful exertion is almost always lost, by a trial of temporizing applications; and we have but too often the mortification to witness only the discharge from the ear. When the ear discharges, the little patient is immediately relieved: it falls into a sound sleep, and forgets all its sufferings; until again it is obliged to go through the process a second, and even a third time, in the period of two or three months.

1199. Sometimes the abscess heals without the smallest trouble, leaving the ear free from discharge in the course of a few days; but at other times, the mischief done the inner cavity of the ear is serious and permanent. The small bones of the ear become detached by suppuration, and are discharged with the pus which constantly flows from the external orifice of this organ. The discharge generally becomes very offensive; both from the matter being confined, as well as from the caries under which the bones are labouring. When caries takes place, the case is almost hopeless; and must, in a great measure, be abandoned to nature, only paying attention to cleanliness. It also happens, that the inflammation of the fibro-mucous membrane of the tympanal cavity travels backwards to the mastoid cells, and even proceeds towards the brain itself, through the fenestra ovalis, and fenestra rotunda in the vestibule, and the cochlea respectively; and may thus be transmitted to that portion of the dura mater which covers the petrous portion of the temporal bone—and hence, we may have delirium, suppuration, exfoliations, and death.

1200. It is a matter of primary importance, to keep the parts clean by frequently washing out the canal of the ear, first with fine soap and warm water, followed by equal parts of lime-water and milk, and a small portion of the tincture of myrrh. Our formula for this purpose, is as follows:

Of lime-water and milk, each two tea-spoonsful;

Tincture of myrrh, twenty drops. Mix.

1201. This mixture should be prepared only as it may be wanted, and thrown into the ear four or five times a day. At night, the child should be made to lie upon the affected side, that the matter may discharge freely.

1202. This discharge from the ear is always attended by dullness of hearing: on this account, it were desirable it should be relieved as quickly as possible, lest its continuance do irreparable mischief to this organ. The mixture of lime-water and milk, when no serious injury has been done to the bones of the ear, will, if properly persisted in, very often succeed; and we are informed, by a late writer on this affection, that a solution of the nitrate of silver, will be found a most valuable application.

1203. We think we have seen advantage from the little patient wearing a plaster spread with Burgundy pitch, or shoemaker's wax, under the affected ear. And we once witnessed a case of years' standing, yield to an issue in the arm of the side affected. This was kept discharging for a year: it was then suffered to heal, which it did without any subsequent disadvantage.

CHAPTER XXII.

OF ADHESION OF THE LABIA PUDENDI OF CHILDREN.

1204. The labia pudendi of young children are very often found adherent. This may be congenite, but we believe it is very rarely so. We have seldom seen this condition of the parts in children under six months old; and still more rarely, after the age of a year. From these facts, it would seem to be almost always adventitious; and, owing principally to a want of cleanli-

ness. Had the child been born with the labia in this condition, it is more than probable it would have been discovered early, as nurses, generally speaking, are, at least, curious, if not always careful, in their examinations.

1205. When we consider the delicacy, and vascularity of the membrane lining the internal face of the labia; the ease with which inflammation may be provoked, in parts so organized; when we recollect how quickly the secretions of the parts become acrid, where proper attention is not bestowed upon them; and how easily a slight inflammation may be increased, by the frequent flow of urine; we shall cease to wonder at the frequency of this complaint, and, perhaps, only be surprised, that it does not more frequently occur.

1206. We have reason to believe, in many instances, this complaint had existed some time before it was discovered: this may, especially, be the case with fat or lusty children, and where the most scrupulous attention is not paid to the condition of these parts. Therefore, it must be looked upon, in general, as a most reprehensible piece of neglect; for it is the bounden duty of every mother, however averse she may be from its performance, to carefully inspect these parts from time to time, particularly, until the child is fifteen or eighteen months old, in order that the inconvenience under consideration may not take place.

1207. Parents should direct, and the performance should be insisted on from nurses, that these parts should be regularly cleansed every time the child is washed, by separating the labia and applying water to them liberally; they should then be tenderly dried with a soft linen cloth, and dusted with hair powder, or powdered starch, in which there is no indigo. If this were regularly done in early infancy, the parts would become so hardened, as very much to diminish the risk of this accident taking place.

1208. We have dwelt upon this subject, because we know its importance; and, because, it has not sufficiently attracted the attention of parents. Unfortunately for the female, sometimes it has not been discovered during infancy; and it is especially so, when it remains concealed until womanhood, when, perhaps, the first intimation she may receive of her situation, is at a time, when of all others she would wish to have been ignorant of it. The alternative, now, subjects her to an operation which should

have been performed in early life; and by which all the finer feelings are excruciated with a severity, that can be better conceived than described.

1209. This complaint sometimes becomes relieved spontaneously, but not always happily; and this may occur more frequently than we are aware of; since the causes which may produce it, are too constantly operating, not to lead us to suppose this accident to occur, in cases where it may not be detected. We had two instances of this spontaneous change to happen under our own observation.

1210. In one of these cases, there was so much inflammation and tenderness in the parts, that we did not think it advisable to operate, until the existing state of things was changed. We directed soft bread and milk poultices, and a cathartic. On our next examination, a complete separation had taken place; by the adhering parts having suppurated, and exposing two raw surfaces, which required much attention to prevent reunion by their healing.

1211. The other case was something similar: suppuration had commenced, and the connecting medium was nearly destroyed, when it was first observed. It was poulticed, as in the other case; and when about to heal, care was taken to prevent a second coalescence of the parts.

1212. This condition of the labia is easily detected, by their refusing to be separated. When the parts are distended as much as their condition will permit, a continuous line of adhesion will be observed though the whole track of the labia, as far as the meatus urinarius; of course, the os externum of the vagina is entirely concealed. The child passes its water without much difficulty; and when the complaint has been suffered to run on, or is not discovered until womanhood, the menstruous fluid has been evacuated through the same external aperture, by which the urine was discharged.

1213. There is but one remedy, that we know of, for this complaint—and that is, to divide the parts. This is very easily performed, by passing a probe-pointed bistoury into the orifice immediately before the meatus urinarius, and cutting downward to the inferior junction of the labia. A small dossil of lint, moistened with sweet oil, may be insinuated between the separated portions. The wounds heal without the smallest difficulty,

in two or three days. Dr. Denman recommends, for the removal of these adhesions, that the labia may be forcibly separated, so that they may be destroyed. We look upon this method as much more painful than the knife, and certainly not more efficacious. See Diseases of Females, by the Author, p. 26.

CHAPTER XXIII.

OF THE DIABETES OF CHILDREN.

1214. This complaint was first noticed by Morton, agreeably to Dr. Underwood; he considered it altogether a sympathetic affection, and we believe correctly—at least, the three cases which we have witnessed, happened to children who were teething. It should not surprise us, more, that the kidneys hold intercommunion with the gums, during teething, than that the neck of the bladder should; and of this we see frequent instances.

1215. Morton speaks of this disease as a family complaint; having proved fatal to all the male children, with the exception of the last, which was under his care, and appeared to be relieved by the plan he adopted—namely, confining the child entirely to a milk diet, and, to allay the excessive thirst, he allowed only milk, mixed with a chalybeate water. The diabetic symptoms, in this case, were wont to return, with every tooth that was about to pierce the gums.

1216. This complaint consists in the immoderate discharge of urine, attended with great thirst and emaciation. In Morton's case, the urine was as sweet as that of adults labouring under this complaint. In those we witnessed, we regret to say, we could not procure the urine to make a trial; and, therefore, cannot tell whether it was sweet or not. All the children we have seen with this complaint, were under fifteen months old; and, though teething, yet from a careful examination of the mouth, we could not, in either of these cases, find teeth immediately protruding the gums.

1217. The quantity of urine discharged was very great; and

this at very many times; the children fell away rapidly, and weakened very fast. We ordered the bowels to be kept freely open; and a quantity of the spirit of turpentine to be put upon the clothes of the children, so as to keep them in a terebinthinate atmosphere. This plan succeeded completely in every case.

CHAPTER XXIV.

OF INCONTINENCE OF URINE.

1218. This is more frequently a disease of habit, than of any derangement of the sphincter of the bladder, or a symptom of stone, or calculi; yet it may occasionally proceed from either.

1219. If this complaint arise from the presence of a stone in the bladder, it is evident, that nothing but the removal of it can effect a cure, if from a lithic disposition in the urine, it may be sometimes improved by repeated doses of magnesia; soda, supersaturated with carbonic acid gas; lime-water and milk; a few drops three or four times a day, of the spirit of turpentine, or of balsam copaiva, &c.

1220. But when it is purely the effect of habit, as it most frequently is, nothing but the destruction of the habit can afford relief. This may be done, 1st, as directed, very properly, by Dr. Underwood, by taking the child up from its bed, after it has been there awhile, and obliging it to remain on the pot, until it discharge its urine; having previously, however, seen that it had emptied its bladder before it went to bed. Or, 2dly, by such remedies as appear to alter the condition of the neck of the bladder; rendering it less susceptible to the irritation of the urine, and by instituting new associations; by creating new sensations, or susceptibilities in it; as by the tincture of cantharides, in doses of ten or twelve drops, three or four times a day, in a little sweetened water; gradually increasing the dose two or three drops at a dose, until heat is perceived in making water; it must then be desisted from; and should stranguary ensue, let it be quieted by drinking freely of flaxseed tea, gum Arabic water, or any other demulcent—if severe, by three or four

grains of camphor, and a few drops of laudanum, or the warm bath. Mr. Lair proposes the introduction of the tincture of cantharides into the urethra by means of a catheter, so as to apply it to its prostatic part. By this means, he declares, he cured three patients of incontinence of urine. *Med. Chirur. Rev. for January, 1827, p. 244.*

1221. Blisters, applied to the sacrum, we have found highly beneficial; or even plasters of Burgundy pitch, upon the same part. A most interesting case of this kind fell lately under our care, which it may be useful to relate. A delicate boy eleven years of age, was severely afflicted with this weakness, from an early period of his life. Every precaution likely to interrupt the habit, was unavailingly had recourse to. During the day, he was constantly running to discharge his bladder, so that he was obliged to neglect even his education; and, at night, it seemed to pour from him in almost a continuous stream. These discharges were attended by severe suffering at the neck of the bladder; so much so, that it led us to suspect there might be a stone in the bladder; and we begged that our friend, Dr. Physick, might examine him—this was done, and no stone was found. The poor boy suffered considerably in the passing of the sound; the parts became a little inflamed, and his urine suppressed. By the use of neutral salts, laudanum, and the warm bath, he was pretty soon relieved of the suppression; and with it passed away almost entirely his inability to retain his water. The black drop was ordered him at night, with the most manifest advantage—this he continued for a long time. We were unwilling to interrupt the use of this medicine, until convinced that the irritability of the bladder was destroyed—this took place in a few months after.

CHAPTER XXV.

OF CONSTIPATION.

1222. Tardy bowels may be either accidental, or constitutional: if the former, it is always well to inquire into the cause, that

it may be removed as quickly as possible. The bowels of infants may become costive, from improper food, or food which, in itself, may be proper in some constitutions, yet may produce costiveness in others. Thus, we find rice, in all its preparations, will, sometimes, make the bowels of some children tardy: when this is found to be the case, it should not be employed under any pretext. Again, boiled milk will have this tendency occasionally, and so many other substances, all of which should be laid aside, the instant they are known to produce this effect.

1223. But there is a cause of accidental costiveness that is not generally known, which is much more injurious than that from any other—namely, from laudanum. Nurses are now so familiar with this drug, that it is as regularly carried about them, as their scissors or thimble, and is much more indispensable to their comfort, than either of these emblems of industry. If the child do not go to sleep, or it be even feared it will not, at the exact moment which will suit the arrangements of the nurse; or if it cry from any cause, so as to give any additional trouble, laudanum is given to make “assurance doubly sure.”

1224. The consequence is, that an accidental is converted into an habitual, costiveness; or the child may fall a sacrifice to convulsions, or other fatal diseases, before this disposition of the bowels may be changed. In all instances of accidental costiveness, the child should be watched; and, if the bowels do not seem inclined to relieve themselves, they should be aided by artificial means; and that very promptly, if the slightest indisposition should manifest itself at this period.

1225. The most prompt application for this purpose, is an injection; or even a suppository.* The former may consist of a rich solution of molasses, in a gill, or even less of warm water, to which may be added a pinch of common salt; the other may consist of a piece of the common brown or rosin soap, of an inch in length, and one-fourth of an inch thick, shaped round, and slightly tapering to a point. This must be dipped first in water, and then passed into the rectum, and pressed by the point of the finger beyond the sphincter ani. Either of these means, will al-

* It may be proper to observe, that in employing a suppository, care should be taken, that it be removed, either by a second application, or by an injection, when it does not speedily produce its effect; and, especially if it excite an unsuccessful effort to discharge itself.

most always procure the desired evacuation; and may be made always most safely, and very often most advantageously, to anticipate the operation of other medicine.

1226. The most proper cathartic medicine for children, is castor oil, or magnesia. The quantity of either must be proportionate to the age and habit of the child—from a tea-spoonful to a table-spoonful of oil will be a dose for children, from a month to two or three years old. Of magnesia, from one to two large tea-spoonsful will be doses for the same ages. The castor oil should always be given warm and alone; the magnesia should be most intimately mixed with a little sweetened milk. Manna may also be used as sweetening for the child's food—it may require from a quarter to half an ounce for a dose.

1227. When it is desirable to alter the costive situation of the bowels as a habit, it is always better to do it by diet, than by medicine. Molasses freely used, is excellent for this purpose; but the best remedy we have yet met with, is a mush, made by boiling a small quantity at a time, of the unbolted wheat flour, in water, and straining it through a sieve, while hot. It will be perceived, this must be made thin. A portion of this must be used in the milk the child takes; or it may be fed with it a little sweetened, two or three times a day, or oftener, or more seldom, as the case may require. When this is properly attended to, we have never seen it fail.

1228. But should this costiveness appear to have provoked fever, induced pain, or excited convulsions, more active medicines, as jalap, or calomel and jalap may be used; or the others, namely, castor oil, or magnesia may be repeated every hour or two, until the effect be produced.

1229. Constitutional costiveness, not attended by any derangement of the system, rarely requires an interference. Dr. Underwood asserts, that the condition of the child's bowels, keep pace with those of the mother; this is certainly very far from being always the case. We have known the child very costive, while the mother was not so, and the reverse. This slow motion of the bowels may be from two days to ten, without the child receiving the least injury from this torpor.

1230. We were once consulted for a child of six months old, on account of its excessive costiveness; it had an evacuation but once in eight or ten days, but was perfectly healthy; throve well,

and in every respect might be said to be in excellent health. We advised that nothing should be done, as long as the child was free from complaint. What added to the peculiarity of this case, was, the relaxed condition of the mother's bowels; she was subject to a kind of diarrhœa, the whole time of her suckling. The child in question never required any medicine; when it began to cut its teeth pretty rapidly, its bowels became less confined, but was never free in them, until after weaning.

CHAPTER XXVI.

OF VOMITING.

1231. Vomiting, with young children, is very far from always being a disease. This fact should be well remembered by young and inexperienced mothers, who are apt to become alarmed by incidents, which sometimes only prove the healthfulness of their children. Of this kind, very often, is the vomiting about to be considered, which, if treated as a disease, by an incautious practitioner, may really be converted into one; whereas, if nature be permitted to have the management, she will secure the health of the child.

1232. But it will be asked, are we never to interfere with vomiting?—and, if we are, how shall we know when this interference may be proper, or when it would be best to let it alone? To answer these questions, it will be necessary to divide this act into the idiopathic, or spontaneous, and sympathetic, or provoked.

1233. By the first, we are to understand, that effort of the stomach, which it almost invariably makes to throw off whatever may be offensive to it, from its bulk rather than from its quality, but in which the system at large has no participation. By the second, we mean, 1st, that the condition which arises from its connexion with other parts of the body, which, when in a state of disease, through the medium of that power called sympathy, becomes irritated to vomiting; or, 2dly, by the presence of some acrid, deleterious, or undigested substance within its own cavity,

exciting it to this act; and, 3dly, when its powers are deranged, and, consequently, its functions are not carried on in a healthful manner.

SECT. I.—*Of Idiopathic Vomiting.*

1234. Under this distinction, we must consider the throwing off the contents of the stomach in young children, and especially those at the breast, when this organ has been compelled to receive too much; the distention becomes a source of irritation, and the act of vomiting, (or, rather, of regurgitation, for it is scarcely an effort,) is produced. Hence, we see children who have been liberally supplied at the breast, often throw up the greater part of that it had just before received. But this act must not be considered a diseased condition of the stomach, or one meriting medical attention. We, therefore, never interfere with such cases, so long as the child thrives, or the powers of this organ are not deranged.

1235. When this kind of vomiting takes place, it is almost immediately after the child has sucked; the milk comes up pure and unchanged; it is discharged without any seeming effort, or nausea; and the moment it is removed from the breast, is cheerful, and, apparently happy; nay, it very often happens in the midst of some expression of its healthfulness and happiness, and this sometimes without altering the expression of cheerfulness. Now, were this vomiting to be looked upon as injurious, and treated as a disease, the evil intended to be removed, would really be created, or increased.

1236. Though we do not consider this an unhealthy act, it is not, or rather it should not, be made a necessary one of the stomach; for it almost always proceeds from repletion; or from this organ being disturbed by some rude handling of the child. To prevent its taking place from the first cause, the child should be taken from the breast the moment it begins to dally with it; or when it ceases to draw, as if it were really gratifying a necessary and proper appetite. If this be done, and the child suffered to remain for awhile perfectly quiet after its removal from the breast, this inconvenience, (for such it is,) will certainly cease. But the too common practice of jolting and tossing the child, (see Book I. p. 176, par. 575,) immediately after nursing,

will be sure to derange its stomach, and vomiting will ensue—therefore, this barbarous custom should be instantly forbidden.

1237. There is an error very commonly committed with children who throw up frequently, which is, to apply them to the breast immediately after they have discharged their little stomachs, under the pretence of “making up for what the poor little thing has lost;” and thus, this evil is perpetuated; whereas, to manage this case properly, the stomach should be allowed to rest awhile.

SECT. II.—*Of Sympathetic Vomiting.*

1238. 1. This act of the stomach, may take place from affections remotely situated from it, as in certain fevers; affections of the kidneys, the head, the neck of the bladder, &c., through the medium of the nervous system. But in all such cases, the stomach cannot very often only be quieted by the removal of the original complaint. Dr. Underwood says, it may arise from “a suppression of the discharge behind the ears, and, more especially, if consequent upon the use of drying remedies;” or, from “the sudden disappearance of some eruption on the skin.”

1239. We have never witnessed vomiting from either of the two last named causes; and we more than suspect, that too much has been taken for granted, unless it be where “drying applications” have improperly been made: in this case, we can readily believe that injury might follow such imprudent practice; but where the discharge from behind the ears, or the disappearance of an eruption from the skin has suddenly taken place, it would be right to inquire, what gave rise to the suppression of a discharge in the one case, or to the retrocession of an eruption in the other? for the cause capable of producing such effects, might also produce the vomiting in question.

1240. The management, then, of vomitings of this kind, consists almost exclusively, in the treatment of the original disease which produced it. It is true, we occasionally succeed in mitigating this affection by remedies exclusively addressed to the stomach, but not often; unless it be when the original disease itself is yielding to treatment instituted for it. Then a little lime-water and milk, soda water, or injections with laudanum, will sometimes succeed. For young children, that is, under a year, a tea-

spoonful of lime-water and as much milk, given once an hour, will generally be sufficient; half a wine-glassful of soda water, from time to time, may be given at once; or an injection of a table-spoonful of warm water, and eight or ten drops of laudanum may be administered. If the child be older, the doses must be proportionably increased.

1241. 2. Where vomiting proceeds from some acrid or deleterious substance being received into the stomach, this action should be encouraged by warm water, chamomile, or common tea, or even cold water, until the offending cause appear to be removed, which may, generally, be determined by no more of the offending substance appearing in what is ejected from the stomach. When this is the case, a brisk injection of a gill, (or more for an older child,) of warm water, and two large tea-spoonsful of common salt, should be immediately given: should this not operate speedily, it must be repeated until an evacuation be procured.

1242. If the injection operate freely, it will very frequently arrest the vomiting at once; but, should it not, it must be followed by one in which laudanum enters;* the quantity regulated by the age of the child. Upon this subject there is one general rule, which it is well should be known; namely, that a child will always bear by injection, three times the quantity of laudanum it will bear by the mouth. The remedies named above, (the lime-water, &c.,) may also be given to aid the injection.

1243. When the vomiting proceeds only from the child's having taken more into its stomach, of its common or even some unusual food, than it can well master, its effects will very generally cease after it has thrown up the undigested articles; and the disposition to do this, should be encouraged, as just directed, by the exhibition of warm water, &c. Should the vomiting not cease, however, when the stomach is freed from the offending cause, a stimulating injection of salt and water will, almost certainly, put an end to it.

1244. 3. When vomiting proceeds from the deranged powers of the stomach, it is almost always owing, in young children, either to an excess, or deficiency of acid, or to the too great irritability of this organ; (and either of these may be occasioned,

* In this case the vehicle for the laudanum should not exceed a table spoonful.

and most commonly is, by the stomach sympathizing with the gums, as in teething;) or it may arise from some inscrutable cause, over which we can have no certain control, though we often have it in our power to interrupt the effect; or it may proceed from some peculiar property in the mother's milk.

1245. If it proceed from an excess of acid, the child will throw up its milk, completely curdled, in a few minutes after receiving it. The curd will be of different degrees of density, as the acid may be more or less abundant, or as the milk may have been a longer or shorter time in the stomach. This may be accompanied with either looseness or costiveness. If it be after the child has commenced to cut teeth, the bowels are, for the most part, loose; but, if before that period, it is very frequently attended by costiveness.

1246. When an excess of acid prevails, it must be relieved by antacids, in small, but repeated doses. If the bowels of the child be loose, the best remedies we have found, are magnesia and soda—the former in mixture, as follows: a tea-spoonful of calcined magnesia, mixed in eight or ten of water or milk, with three or four drops of laudanum, and a little sugar. A tea-spoonful of this every hour or two, very quickly allays the irritation of the stomach, and quiets the disturbance of the bowels.

1247. Should the bowels be confined, the laudanum must be omitted, and the mixture given, until the bowels are opened. Or should the bowels need no attention, the supersaturated soda water, in small doses, will answer admirably well. If the child refuse to take the soda water, the lime water and milk, as just directed, may be given in repeated doses, until better.

1248. In these cases, the mere destruction of this acid, in most instances, appears every way sufficient to relieve the stomach. This circumstance cannot fail to surprise, since, at first sight, this would seem to be but removing the effect of a cause, over which we do not know that we have any influence: for one of two things must happen, in these cases; either, the acid is formally secreted by the stomach in too large a quantity; or the secretions of the stomach, by some peculiar disposition of this organ, become acid immediately after their formation. It is, therefore, difficult to understand how, in the first supposition, the destruction of the loose acid shall prevent the farther formation of it; and in the second, how it shall alter the action of the vessels, so

as to change the tendency of the secretions to become acid, when free in the stomach.

1249. It must be recollected, however, that every instance of the child throwing up coagulated milk, must not be considered an evidence of disease, or even of a superabundance of acid; for this change in the milk must take place before digestion is accomplished; therefore, in the most healthy and vigorous stomachs, if vomiting be provoked some time after the child has sucked, the milk may be thrown up in this condition.

1250. If there be a deficiency of acid in the stomach, and a vomiting be produced, the milk will come up unchanged—nausea almost always attends this variety; the child may be observed to become pale, and, evidently, to struggle against the efforts of its revolting stomach. The milk is ejected with great force, in a large column; and not unfrequently, a portion passes through the nostrils.

1251. We have rarely seen this condition of stomach fail to be relieved by the occasional exhibition of small quantities of lemonade. The acid drink, however, should be stopped, as soon as the ejected milk shows signs of separation. An injection of a little salt and water, greatly promotes the recovery of the stomach.

1252. Should the stomach possess too much irritability, the milk will be thrown up unchanged, almost as soon as swallowed, and will not be permitted to tarry sufficiently long to become coagulated, however abundant the acid may be. In this case, the efforts of the stomach are not so powerfully exerted, and the milk is discharged from the mouth with less force. The child, under such circumstances, should be but seldom nursed, and but for a short period. It should not be suffered to fill its stomach, or it will be sure again immediately to discharge itself. From a quarter to half a drop of laudanum should be given in a little sweetened water, about fifteen minutes before it is nursed, and this three or four times a day. A salt and water injection will also be proper. If it proceed from some peculiarity in the mother's milk, her diet must be changed; should this not answer, a wet nurse must be procured, or the child weaned.

CHAPTER XXVII.

OF DIARRHŒA.

1253. By this we understand a too frequent discharge of the feculent contents of the bowels, without tenesmus. The great variety of appearance in the matters discharged, has rendered it proper to divide this disease into several species; and, first,

SECT. I.—*The Feculent Diarrhœa.*

1254. Children under two years, or two years and a half old, are especially liable to this complaint. We shall cease to wonder at this, when we recollect the great length, sensibility, and irritability of the stomach and intestinal canal; the variety of parts with which they powerfully and almost constantly sympathize, (as the liver, the skin, the lower extremities, the brain, and the gums, during teething; and the immense surface they present to be acted upon by acrid or other offensive substances received into them.

1255. Therefore, whatever is capable of increasing the peristaltic motion of the bowels, or even, perhaps, a portion of them, may occasion the disease in question; hence, the frequency of this complaint, especially during infancy; since, at that period, the bowels are decidedly more irritable, and many of the remote causes are constantly acting.

1256. This increased action of the bowels, in this species of diarrhœa, may be occasioned both directly and indirectly:—directly,

1257. 1. By improper or irritating substances being carried into them; as food of a bad quality; or too much of that which may be good, when taken in improper proportions. This affection may be caused by children receiving into their stomachs a vitiated milk; or food of an irritating kind, as animal substances, either fresh or salt, before the stomach is capable of subduing them; or such as shall undergo a vinous fermentation, as too much sweetening in their victuals, and this permitted to stand until this change is about to take place, before it be given. We have repeatedly known stale food occasion the complaint in

question; or merely receiving proper food, but in excessive quantity.

1258. In all the instances just supposed, the stomach not being able to digest its contents, the bowels become stimulated by the ill-subdued food urged into them, and make an effort to dislodge it as quickly as possible, by increasing their peristaltic motion; hence, their contents are rapidly and successively transmitted through them, and occasion what is called the feculent diarrhœa. Or, it may be occasioned by the presence of bile in the duodenum; this bile may be either in too great quantity, or it may be highly depraved in its quality; and may, in either condition, so affect the peristaltic motion, as to produce diarrhœa.

1259. This species of looseness is almost always attended by some nausea, and a little pain; or such sensations as generally attend the exhibition of a cathartic of a stimulating kind, when it is about to commence its operation. This is the most simple form of diarrhœa; and it very often effects its own cure, by the profuseness of its discharge;* but, should it not, a dose of magnesia, if there be any evidence of acidity, or castor oil, or rhubarb, if there be none, will almost always be sufficient for this purpose. Should it not, it may be repeated, but followed by an appropriate dose of laudanum at bed-time, should fever not be considerable.

1260. We may remark, before we go farther, since the position is of constant application, that it is not a matter of indifference what substance we use as a cathartic in any one species of diarrhœa; for success will very often depend upon the proper choice. Thus, neither castor oil nor rhubarb would be so effectual as magnesia, in that diarrhœa in which the fæces had a predominating acid in them; nor would magnesia be so successful as either castor oil, or rhubarb where there was an absence of acidity, as it requires a combination, to a greater or less extent, with such a substance, to render it efficient.

1261. It may be proper farther to remark, that during the operation of medicine, very little food should be given the child; and never any of a solid kind.

* At other times, we may find the attack to be ferocious; being preceded by convulsions, and followed, as soon as sensibility is restored, by considerable pain in the bowels; fever, and this considerable; convulsive startings, &c. This particularly happens with children who have been over or improperly fed, or who possess an unusual degree of irritability, or who teethe with much difficulty.

1262. Should there be much nausea, or many efforts to puke, it will always be best to cleanse the stomach; as these symptoms are almost sure to rise, from the presence of a portion of whatever substance may have been offensive. For this purpose, we have ever found calomel, in proper doses, the best possible remedy; for it is almost as certain to produce vomiting, under such circumstances, as a medicine absolutely emetic, without the inconvenience of the latter remedy. The calomel, in such cases, had always better be given in divided doses—say, the full dose, divided into three parts, and a portion of it given every hour in a suitable vehicle,* until it effects the intended purpose.

1263. The doses of calomel proper for the different ages and habits of children are easily ascertained when given, as just suggested, in divided doses; as this medicine almost always acts with more certainty and promptitude, when thus given, whether its operation be intended to be emetic or cathartic; and at the same time, no possible risk is incurred, as the child cannot take in this manner an over dose. With the adult, we know that enormous doses are given by some; and this without any additional sensibility, though it is said with a greater certainty of ultimate effect; but this does not obtain in the child, where there is so much more irritability of system—and, of course, it must not be taken for a rule. Therefore, should a full dose be estimated to be six or eight grains, or even less, it must be divided into three or four portions; one of which, should be given every hour, until this quantity be taken, unless the previously exhibited parts have operated. And should this fail to have operated as an emetic, we may be pretty certain there is nothing offensive remaining in the stomach, and the calomel will sooner or later pass through the bowels.

1264. We have made the above remarks, with the hope they may diminish the fears so very often entertained of the violence of this medicine: we can truly say we have never witnessed a

* It is a matter of consequence, to attend to the vehicle in which calomel is given; its great weight prevents its being suspended in water, or any other equally thin fluid—it must, therefore, be mixed with a drop of syrup, almost of any kind; or, with a very small portion of loaf sugar, and may be thrown dry into the mouth. It is also of much use to attend to the quantity, as well as the quality of the vehicle, as much error is committed, by employing vastly too much of it. The quantity should be no more than will entangle the calomel.

single instance of over-purging or puking, from this drug. We do not mean, however, to convey the idea, that it cannot happen; far from it; for we are sure it might take place, with it, as well as with any other medicine, injudiciously exhibited—we only mean, that too much apprehension is frequently cherished when it is exhibited. Therefore, a grain or two more of calomel to a child beyond six or nine months of age is of no moment, provided this quantity be all the excess. Nor would we say there are not peculiarities of constitution, which would prohibit the use of this medicine. These cases, however, are so very rare as hardly to amount to an exception. But when they occur, they should be strictly attended to.

1265. This complaint should never be neglected; especially, at such seasons of the year, as are most favourable for its production; namely, during the excessive heat of summer, or when the weather becomes cool in the fall; for when not attended to, it is apt to degenerate into a habit, and to be of extremely difficult removal.

1266. 2. Indirectly. Diarrhœa may be induced, by the bowels sympathizing with some other part; as with the skin, upon the sudden check of perspiration; the application of cold to the surface of the body; or by the improper use of the cold bath. With the brain, from agitation of mind, particularly that of anger or fear; or with the mere sight of a purgative, which the patient is reluctant to swallow. The latter of these causes, however, can not be said to operate with children; and are only mentioned to prove the extent to which the bowels may sympathize.

1267. When diarrhœa is produced by indirect agency, especially cold, it will frequently continue, even after the cause which produced it is removed. This kind is rarely accompanied by pain, unless fever be excited; in which case the bowels suffer sometimes very much; the skin is often very hot and dry; considerable thirst, white tongue, and great fretfulness. There is almost always mucus mixed with the fæces, in such cases.

1268. This case is treated **very** much like the former, except where pain and fever attend; then castor oil is the best remedy. This should be given in appropriate doses,* every two hours,

* Castor oil should always be made thin by warming, before it is given; and it is always easiest to take, when it is not mixed with any other substance. A large tea-spoonful is a dose for a child from one to three months old; a dessert-spoonful,

until it operate freely; or until the oil is observed to pass through with the fæces. If considerable pain continue after the operation of the oil, the warm bath may be used most advantageously. If perspiration be excited, the fever will quickly pass, though the tormina of the bowels may remain. Should this be so, an injection, with a proper quantity of laudanum, may be given. This plan of purging, bathing, and giving laudanum, must be continued, as the symptoms may indicate, until the disease ceases. During the whole management of diarrhœa, the strictest regard should be paid to the diet and drinks of the patient. The former should consist of either of the diluted jellies of rice, tapioca, sago, or arrow root; the latter should consist of thin flax-seed tea, barley water, rice water, gum Arabic water, or an infusion of the slippery elm bark.

1269. Should the bowels be sympathizing with the gums, the disease will prove more obstinate, and, perhaps, be even continued in a chronic form, especially if the early part of the disease have been neglected, or improperly treated.

1270. The mouth, under these circumstances, requires attention; for if the teeth give much irritation, the diarrhœa may continue as long as this last, however industriously we may address remedies to the bowels. In every case of this disease, where teeth can be suspected of having an agency in its production, the gums should be carefully examined; and, in doing this, the recollection of the general order in which the teeth are cut, (See Book I. p. 202, par. 656) will greatly aid in the detection of the irritating teeth—but this order must not be scrupulously relied on, for the deviations, as already noticed, are considerable.

1271. Should the gums be swollen, they should be cut down to the teeth, and that freely—but if there be no swelling or inflammation in the gums, it would be as unavailing as cruel, to lacerate them. As far as our experience goes, we think we are justified in saying, there is no advantage derived from this operation, when there is no evidence of irritation in the gums from the protruding teeth; though we confess there are many expe-

for one from three to nine months old; a table-spoonful for one from nine months to eighteen months old. These are, of course, but very general directions, for only such can be given. Increasing, repeating, or diminishing the dose, must be regulated by circumstances; of which, almost any body who has charge of children, will be a competent judge.

rienced and intelligent practitioners in the habit of performing it. We think we are not deceived, when we say we have never known the slightest advantage from dividing the gums, when there was neither inflammation nor swelling, though the teeth were rapidly making their appearance; for the act of cutting teeth, as we have already said, (674) is not always attended by a sympathizing system.

1272. We are aware, that many are opposed to the use of laudanum in the early stages of diarrhœa; but we think they are too indiscriminate in the rejection of this remedy. We are ourselves averse to its administration, where the bowels have not been liberally purged; where there is fever; and where there is no pain; but where neither the want of due purging nor fever, make a contraindication, we almost always give a small quantity at night, and especially if the child be very restless, or in pain. We are persuaded we very much abridge this complaint by this plan, and almost certainly prevent its running into a chronic form, after we have removed, as far as in our power, the exciting causes of the disease.

1273. During the continuance of this disease, we strictly forbid animal food or juices, under any form.* If the child be at

* We were not a little surprised to find the following observation from Dr. Cheyne, on the subject of proper diet for children; namely, that "an animal diet produces less irritation than one which is solely composed of vegetable matter," p. 36. It is certainly contrary to our own experience, and, we had almost said, to that of every body else. We have ever found reduced milk, rennet whey, gum Arabic water, thin sago, tapioca, or arrow root, vastly more proper in all the complaints of the bowels, where nourishment may be safely permitted, than any animal juice, however much diluted. But we are persuaded that during the acute form of the disease, where purging is necessary, where there is pain, and fever, the less of any thing the child takes into its stomach the better. For at this time the condition of the system is such, as not to require nourishment, for who wants "to feed a fever," or who ever knew pain arising from irritation, or, perhaps, inflammation of the bowels, relieved by cramming the child with food? The only proper thing, at such times, is a little of the mother's milk, if the child be not weaned, or if weaned, milk and water, if milk be known to agree with it; or the occasional use of thin gum Arabic water.

Besides, we would ask, of what possible use can nourishment be at this time: since, from the deranged and irritated way, oftentimes, of the inflamed state of the stomach and duodenum, healthy or perfect digestion cannot be performed; and if it cannot, that which has been received, and not properly subdued by the stomach and duodenum, is an extraneous substance to these parts, and acts like one, by keeping up irritation.

the breast, let it be confined to it, if the mother have a sufficient supply; if she have not, let it be in part supported by reduced milk, and a little sugar. Its drinks may be very thin milk and water, barley, or rice water, or, simply, water, if it refuse those just mentioned. No solid food whatever should be given during the existence of this complaint; and every kind of liquor, whether fermented or distilled, should be peremptorily forbidden. The child should be more warmly clad than usual, unless the weather be very warm. But its feet should be covered with socks or shoes, both by day and by night. If the weather be not excessively hot, but especially if it be cool, the legs must be kept enveloped in woollen stockings, and its body in flannel; provided, the disease be not in its active state; and accompanied by fever and a hot skin, and these parts not cold.

1274. The greatest care should be taken, that through a mistaken kindness, the child do not receive articles every way injurious to its disease—such as fruits, (see Book I. p. 222,) meats, preserves, raisins, &c.; and that it be not suffered to swallow the hundred *infallible cures* promulgated by newspapers, or recommended by officious and visiting gossips.

1275. The child should not be permitted to sit on a damp or cold place; as stone or marble steps, pavement, &c.; nor placed so as to receive a draught of air, especially if its skin be disposed to moisture.

SECT. II.—2. *Of the Bilious Diarrhœa.*

1276. In this species, the fæces are loose, copious, and of a bright yellow or green; and the bowels are stimulated to inordinate action, by an overcharge of bile, either vitiated or not. This complaint is very frequent among our children during the heat of our summers, or as the fall approaches. The influence of a hot sun upon the actions of the liver, is well known to every body; it is familiar to common observation, that after a spell of very warm weather, even the healthy evacuations of the adult, give evidence of its rapid formation, and sometimes of its abundant absorption. Thus, the fæces are observed to be loaded with bile; and the urine to be deeply tinged with it; and when the complaint, of which we are treating, seizes upon children, it is called “the summer complaint.”

1277. If the adult system, then, can be so inflamed by excessive heat, we need not be surprised that infants should suffer under the same power; and this very often, independently of the most of the remote causes enumerated under the first species. (1257.)

1278. During our summers, the action of heat is both uniform and excessive; the liver feels its influence, and is forced to an inordinate secretion of bile, which being suddenly and rapidly poured into the bowels, stimulates them to excessive action, either by quantity or quality, or both, and thus the bilious diarrhœa" is produced.

1279. This action of the bowels, as in the species just considered, sometimes relieves them of their stimulating contents, and will thus effect its own cure—hence, this species, like the other, may be ephemeral; and not be more formidable than the feculent species, unless the formation of bile goes on almost indefinitely, or fever be provoked.

1280. No period of infancy is free from attacks of this kind; and especially in summer, or early in the fall. We have seen extensive bilious evacuations from children of ten days old; and from this time to every period of childhood, they are obnoxious to them.

1281. We believe teething very rarely occasions this complaint, though it may very much aggravate the general symptoms by increasing the natural irritability of the system, and thus give rise to fever. Should fever take place, the disease becomes more formidable: not because the discharges from the bowels may be increased, but because fever in itself, under all modifications, is formidable.

1282. The plan of treating this form of diarrhœa, will suggest itself; the bowels must be evacuated of their contents; and that by the remedy which so decidedly and successfully exerts a control over the actions of the liver; namely, calomel, in small, but repeated doses, until from the change in the appearance of the evacuations, it is judged the purging has been carried sufficiently far; that is, when a little of the mucus of the bowels, or small coagula of milk show themselves.

1283. At night, in the absence of fever, the motion of the bowels should be tranquillized by a proper dose of laudanum*—

* The proper dose of laudanum for infants and children, may be reckoned at

preferably by injection, if practicable; if not, it must be given by the mouth. Should the complaint re-appear the next day, the calomel may be repeated, but at longer intervals, and only sufficient to procure a decided evacuation; this should again be followed by the anodyne, and so on, until the disease disappear.

1284. The diet and drinks should be the same as before recommended; (1273) except, that rennet whey answers, both as nourishment and drink, an admirable purpose in this species of diarrhœa. .

1285. If fever attend, it will require more purging than if it be absent; but, after the bowels have been properly evacuated by the calomel in the beginning, castor oil should be used; or, if there be evidence of acidity, that is, greenish, or hard, small coagula of milk, magnesia, or magnesia and rhubarb are the preferable laxatives. The occasional use of the warm bath will also be proper. Much advantage is found in giving very minute doses of the tartrate of antimony every two hours in this condition of the system*—it maintains the action of the bowels, and very much abates the force of the arterial system. Should the small quantity given, produce puking, give but half the quantity until the stomach will bear a fuller dose, unless bile be thrown up from the stomach—if so, encourage the discharge.

1286. Mr. Burns says, “During the whole course of the disease, it is proper to support the strength with light nourishment, such as beef tea, arrow-root jelly, toasted flour boiled with milk, &c.” “The strength should be supported by small quantities of white wine whey, given frequently.” (Vol. II. p. 195.)

the following rates. Half a drop for a child under ten days old; a drop, for one from that period, to the end of the month: a drop and a half, or two drops for one from that period, to three months; three drops from this time to nine months; four drops from nine months to eighteen; five or six drops from that time to three years—then, for every succeeding year, a drop or two may be added. These doses are prescribed for children who are altogether unused to this drug; the power of bearing more, may be rapidly increased by habit. In giving directions for the use of laudanum, we should always understand the habit of the child in this particular, and regulate the prescription accordingly. When laudanum is to be used as an injection, we may safely increase the quantity three or four fold.

* By small doses of the tartrate of antimony, we mean, from the tenth or twelfth to the twenty-fourth part of a grain. It should be carefully dissolved in its proper or intended quantity of water, which should be accurately measured; the spoon by which the water was measured, should be the one to give it from.

1287. This advice must be taken with considerable caution, especially in using the beef tea, and the wine whey; as Mr. Burns himself admits, that fever attends this complaint, and, that there is much intestinal irritation. In every disease, almost, there is too much anxiety expressed, for the strength of the patient; it does not seem to be recollected, that the patient and the disease, are a unit; and when you attempt to strengthen the one, you run the risk of increasing the other; especially, if this be done with stimulating articles of diet. It should also be recollected, that debility is not disease—remove the disease, and you will rarely have trouble with the debility. Besides, where it is confessed there is much debility, it is never best removed by stimulants alone, unless every article of diet, however bland, or entirely vegetable, be considered as such.

1288. Brown considers every thing as *stimulants*; and he divides them into two general classes; viz. the durable, as food of every kind; and the diffusible, as alcohol, in all its varied modifications, as brandy, wine, porter, &c. Therefore, agreeably to this scheme, every thing taken as diet, must be stimulating: let this be admitted; if it will be conceded at the same time, that they differ not only in force, but in their modes of action; that they differ in possessing, from the smallest, to the greatest power; and that the force or power of the stimulant, should be accurately proportioned to the state of the system. We will then say, agreeably to this arrangement, that each article of food, or of drink, must be considered as a stimulant of a given power, and come under one of the classes just named; durable or diffusible. But, on the other hand, it must be granted, that the true art of curing diseases consists in the regulation of stimuli, to the force of disease, or, rather, to the susceptibilities of the system to be acted upon.

1289. If this be true, and we believe it will not be disputed, the use of beef tea, a highly stimulating article, of the durable kind, and the wine whey, another, though not a very powerful one, of the diffusible kind, are decidedly improper in affections of the bowels, where fever and local inflammation exist, as they do, perhaps, in almost every case of diarrhœa.

1290. It may be said Mr. Burns does not recommend them, where there is fever—he does not expressly; but he tells us, that “*during the whole course of the disease, it is proper to*

support the strength with light nourishment; such as beef tea, &c.;" and "by small quantities of white wine whey, given frequently." (loc. cit.) Now, what are we to understand by the whole course of the disease, but from its commencement to its termination? and fever, which he admits to accompany this disease, at least, sometimes, can have existence but during some one part, or the whole of this period; therefore, the wine whey, and beef tea, must be given when fever is present; since it is, agreeably to Mr. Burns, "proper to support the strength, during the whole course of the disease."

1291. If we can place any reliance upon the accuracy of our own observations, we can with much safety declare, that beef tea, or any other diluted animal extract, has uniformly been attended with bad consequences, in the commencement of almost all affections of the bowels; and this from a twofold action: 1st, it is too stimulating when applied to the surface of the irritated bowels; and, 2dly, in affording too much nourishment, for the febrile condition of the system. The wine whey, though a novel remedy to us in acute bowel complaints, is still more exceptionable, from its mode of action, than even the beef tea; therefore, we should forbid it; as we make it a first and positive direction, that no animal substance of any kind, or in any form, shall be given in diarrhœa, even in its most simple form, when attended with bilious discharges; and we as positively prohibit liquor of every sort. We have none of those over-weening apprehensions for the strength of our little patients, that would lead us to cram them with nourishment; consequently, we make very little provision for their support: believing the first object is to free them from disease, by the most prompt and efficacious means in our power; and until we do this, in acute diseases, we permit strength to take care of itself.

1292. But we must not be understood to forbid all nutritious substances to the child; this we do not do; but we are very particular, both as regards quantity and quality, when nourishment is permitted. The other articles enumerated by Mr. B., (arrow-root, boiled flour, &c.) we employ, occasionally, in small quantities, as well as rice water, barley water, gum Arabic water, thin sago, and tapioca; and *rennet whey*, during the period of purging, if the child be weaned; but if it be not, we confine it

to the breast for nourishment,* and to barley, or rice-water for drink.

1293. It may be proper to observe, that, in the species of diarrhœa we are now considering, we have not made, as some have, (Good, &c.) yellowness of the evacuations essential to it—we very often see them of various shades of green, from the bright grass green, to the bottle, or almost black green; this is sometimes accompanied by a frothy top, or the whole mass looking spongy, resembling very much the green production on the top of stagnant water; at other times, it is of pitchy darkness and tenacity. Where this last is observed, it has always been preceded by a pretty obstinate fever, which does not usually yield, until these black evacuations come away.

1294. The bile, beside several other purposes, is supposed to neutralize the acid formed in the stomach; and when this, as well as the bile, is abundant, it may give a tone of green to the evacuations. This use of the bile must necessarily be important in infancy, where there is so strong a tendency to generate acid; or for the ingesta to become so, by tarrying long in the stomach and bowels. Where, then, the bile is deficient in quantity, or the acid, more than usually abundant, we have not only green stools, but oftentimes very frequent ones; owing, doubtless, to the presence of so much loose acid coming in contact with the mucous coat of the intestines; hence, the utility of absorbents in such cases, and the almost immediate cessation of diarrhœa after their exhibition, if they be purely absorbents,† as the prepared chalk, oyster-shells, &c. But as absorbents can only be given with advantage, where there is an excess of acid, they should be given with much caution, where this is not satisfactorily proved to exist; especially, where there is febrile irritation attending

* We even limit this sometimes; especially where there is much fever; or when there are many milk coagula discharged. In such cases, we permit the child to be seldom nursed, and then the above nourishment to be given in but small quantities.

† We say, purely absorbents: by this we mean where the union with an alkaline earth will not form a purgative compound—thus, when the carbonate of lime, as in chalk, meets with an acid, the *tertium quid* will not be purgative. But should we give magnesia, confessedly an absorbent, the union of the acid with it improves its cathartic qualities; and of this we often take advantage, in certain conditions of the bowels. Hence, the risk which is sometimes incurred by the incautious use of the “cretaceous mixture,” as suggested, (1295) by immediately putting a stop to the motion of the bowels.

the diarrhœa, as almost always happens when this complaint arises from teething.

1295. Much injury has been sustained by mistaking green bile for acidity, and administering the cretaceous mixtures: authors abound with cases of cholera, convulsions, fever, &c., arising from this cause. It, therefore, becomes very important that the one should not be mistaken for the other. But we shall have occasion to revert to this subject presently.

1296. Where a bilious diarrhœa has continued for some time, either from the force of the remote cause, neglect, or ill treatment, and has been attended pretty uniformly by green and slimy stools,* we have often the satisfaction of seeing them speedily change to a bright yellow: this change in the appearance of the discharges, is almost a certain sign that the disease is about to yield. This has been effected, by ordering a proper regimen; regulating the heat of the body; covering the limbs with woollen stockings; applying flannel to the abdomen; prohibiting improper drinks; withholding “*infallible remedies*,” lancing the gums; by the use of small doses of calomel, and the occasional exhibition of laudanum, either by the mouth, or by enemata.

1297. In this stage of the complaint, we are sometimes aided very much, by giving lime-water and milk, in equal portions,† several times a day; or sometimes by having their milk diluted with it instead of common water, where the child is either weaned, or is obliged to be supported, in part, by artificial means.

SECT. III.—*Mucous Diarrhœa.*

1298. The evacuations consisting of, or containing, a copious discharge of mucous. This species is commonly produced by a sudden check of perspiration, or the sudden application of cold to the surface of the body and the feet, especially in adults. We have seen it follow, in two instances, in children, the improper use of the cold bath. Children have been seized with this com-

* By slime, we do not mean the mucous secretion of the bowels, which is white or whitish, tinged with a little blood; but a tenacious bile itself of a green colour, though not, perhaps, so intense as the general substance of the evacuation.

† The dose of lime-water and milk, may be a tea-spoonful of each, every hour or two for children under six months; double this quantity, or even more, for older children.

plaint from the sudden transitions of the atmosphere, where they have not been properly protected. This species is, perhaps, the only one in which the teething of children have not been accused of an agency.

1299. The discharges in this complaint are not so frequent, by any means, as in the species we have just been considering. There is sometimes a little forcing or tenesmus, and occasionally a little blood. The fæces are, for the most part, of a light green, and not very abundant, unless procured by medicine; then oftentimes, they are very copious, and offensive. A little mucus, always precedes the feculent matter, and is almost sure to be followed by it. For the first few days, the mucus resembles that yielded by the nose in catarrh; after this, it becomes thicker, less transparent, and in a short time more purulent; and when purulent in its appearance, it is almost always found to be streaked with a little blood. This change is generally favourable, and bears a strong analogy to what takes place with catarrh, when about to get well. It, therefore, rarely requires any thing more than persisting in the demulcent food and drinks recommended above. Unless the stools now become numerous, thin, and very yellow or green; in this case, a little rhubarb tea,* with very minute doses of laudanum, will be found to answer admirably well; but the mucilaginous drinks must be constantly persisted in.

1300. Fever rarely accompanies this complaint, in its milder forms; and it is of easy management, in general, with children; but, in adults, we have known it very obstinate. The remote cause should not be repeated, if it proceed from cold bathing; and removed, or its operation prevented, if from cold, by additional clothing, &c.

1301. The bowels should be gently purged by castor oil, and its operation followed in the evening by a suitable dose of laudanum. This plan must be pursued daily, until the bowels be relieved; or they may be purged by rhubarb and magnesia during the day, and followed, as before directed, by an anodyne in the evening. The diet should consist of such articles as have been

* Rhubarb tea; take half a dram of bruised Rhubarb; pour on it a wine-glassful of boiling water—let it stand until cool—strain, and add a little loaf sugar to it. A tea-spoonful every two hours should be given, until it colours the stools.

already directed; and the patient take freely of an infusion of slippery elm bark, or gum Arabic water.

1302. Dr. Good condemns the use of purgatives, in this species of diarrhœa; but upon no good ground, that we can perceive—our experience is decidedly in favour of the plan just proposed; that is, mild doses of castor oil, or gentle doses of rhubarb and magnesia in the beginning of the disease. If, by purgatives, Dr. G. mean no more than laxatives, we would agree with him. He would certainly give laxatives in dysentery, so as to procure one or two fœcal evacuations per diem, to which it bears some analogy, as far as regards effects, and appearances: only in the mucous diarrhœa, there is, in general, no vascular excitement, and, therefore, most probably, no inflammation, though certainly irritation; whereas, in dysentery, more or less inflammation always attends.

1303. Dr. Good, and others, recommend in this affection, or in any “other looseness produced by a sudden chill upon the surface, small doses of ipecacuanha, with or without opium.” We have used this prescription at night, and, we think, with evident advantage; but it should not be given in the day, unless there be considerable pain; and then only after an evacuation of fœces has been procured.

SECT. IV.—*Chylous Diarrhœa.*

1304. This form consists of chylous or milky evacuations. It would appear that there is a deficiency of bile in this disease, as the dejections are not tinged with this substance—consequently, this complaint would seem to be necessarily accompanied by some derangement of the hepatic system, either positively or accidentally. The liver may not be in a condition to secrete this fluid abundantly, or its flow into the intestines, may, by some means or other, be impeded.

1305. We are inclined to believe in the first, rather than in the second condition of the liver; since we have never witnessed, that we recollect, this complaint being attended by jaundice. But why the lacteals should refuse to take up the chyle after it is formed, is very difficult to say; yet we know there is a strong consent between the liver and the lacteals; as emaciation takes place very rapidly, when that viscus is much deranged; or, the

lacteals may, like the intestines themselves, require the presence of a certain quantity of bile, to be *healthfully* stimulated.

1306. Do the lacteals really refuse this fluid?—or is it only supposed they do not absorb any, because they do not take up the whole? Would this want of absorption really prove an incapacity to do so? May not the fluid ejected from the bowels be very far from a well concocted chyle?—and may it not, in consequence of this, lack the appropriate quality to stimulate them to the act of absorption?

1307. We have seen this complaint make its appearance suddenly in children, after weaning; and we have seen it make its approach gradually, after a pretty long continuance of bilious diarrhœa. In both these cases, we have supposed the digestive organs, particularly the duodenum, to be in fault, rather than the lacteals, or mesenteric glands. We have believed that the product of digestion has been ill elaborated, as well as too speedily passed through the bowels. The appearance of the dejections would seem to prove the first; and its quantity and fluidity, to countenance the second.

1308. In consequence of ill elaboration, the chyme must possess new or unusual properties: possessing new properties, it would be likely to act upon the susceptible bowels, almost as a foreign substance; and they would, in consequence, be urged to an increased peristaltic motion; or become passive, by not being duly stimulated. And the absence of bile may be adduced in support of the belief of this absence of a certain quality in the chyme; since the extremity of its duct is not properly stimulated to pour it out.

1309. When a child is seized with this complaint, it very rapidly becomes weak, and emaciates with surprising suddenness, and, if not relieved pretty soon, it becomes exhausted for want of nourishment.

1310. In treating this complaint, whether it be suddenly induced, or it follow a diarrhœa, we have always prescribed for the condition of the stomach; and we may safely say, we have generally succeeded. We should withhold almost all food from the stomach, that its weakened powers need not be longer overtaxed. We, therefore, confine the child to small quantities at a time of rennet whey, or gum Arabic water: nothing else is permitted. We endeavour to restrain the passages, by an anodyne in-

jection of full power, at night; and give, during the day, minute doses of calomel—say, a quarter-grain every four hours, with the twentieth of a grain of opium. We persevere in this treatment for a few days, unless the calomel urge the bowels too much—in this case, we diminish the quantity of calomel, and increase that of the opium. We have thought we have derived advantage from the application of a blister to the back of the neck, and keeping the whole body unusually warm.

1311. We have seen the most decided relief from this plan; and giving the stomach very little to do, it becomes reconciled to its duties, and fulfils them after a little while, perfectly.

1312. Quere: would small quantities of bile, exhibited in some form or other, be useful in this complaint?

SECT. V.—*Lienteric Diarrhœa.*

1313. “The rapid passage of the nearly unchanged aliment through the bowels, constitute this species of diarrhœa.” With children, it sometimes follows the other species of diarrhœa, but, perhaps, oftener, dysentery. It is not accompanied by much acute pain; though the child appears uneasy after eating; and is immediately relieved by an evacuation taking place, which is perceived to consist of the food taken into the stomach a little while previously. This complaint rarely comes on, suddenly; and it may exist in different degrees. When a tendency to this complaint is first perceived, it should be instantly attended to; for it is one of those affections, that rarely, if ever, cures itself.

1314. It, generally, commences during the chronic state of diarrhœa, by showing, perhaps, that some one article of diet only, has passed the bowels unchanged, as potato, apple, or other vegetable substance, or fruit, which has been incautiously given to the child. This is pretty soon followed by other articles, as meat, &c.; and, finally, every thing, almost, that enters the stomach, is speedily conveyed through the intestines, with little, or no appearance of having been acted upon by the powers of the stomach. The appetite is, sometimes, voracious in this disease, and the thirst is always considerable.

1315. Dr. Good declares, “the bile, as in the case of chylous diarrhœa, is not duly secreted, or is obstructed in its passage; for, were there a free flux of bile, the fæces, however crude and unconcocted, would display their common hue, which they *rarely*

exhibit.” This is not altogether accordant with our experience: we have rarely, if ever, failed to see bile in a greater or less degree accompany the lenteric discharges, and, sometimes, we have seen the food imbedded in a quantity of pure bile. That the functions of the liver may be impaired or vitiated in this complaint, we have no hesitation to believe; but that the secretion stops altogether, or that its passage is obstructed, as a common event, we cannot accede to; at least, when it happens with children; and we confess ourselves not to be familiar with it in adults.

1316. If no bile were secreted, none could appear in the stools; but Dr. Good seems to confess there is, occasionally, the presence of bile in them, though he says, they “rarely exhibit” it. We, on the contrary, say we do not recollect an instance in which there was a total absence of this important fluid in the stools. It may readily pass unobserved, if it be not looked for; since the frequency of stools is sometimes so great, as to attach but little bile in their course. There cannot be an obstruction to its flow, as there are no signs of jaundice.

1317. This complaint seems to be seated altogether in the stomach itself, and owes its existence to the too great irritability of this organ; for no sooner is food lodged in it, than it makes efforts by an increased peristaltic action to discharge it; and the intestines transmit it with equal speed to their extremity, there to be discharged. Dr. Good suggests, that “the gastric juice may not be secreted in proper quantity or with proper qualities:” this may be; but it is not sufficient to account for the phenomenon; for this happens precisely in dyspepsia, but dyspepsia is not attended with lenteric.

1318. We have been in the habit of treating this disease very much after the manner of “chylous diarrhœa,” to which it has a very strong resemblance, in the rapidity with which the food is passed through the tract of the intestinal canal; and would seem to be but an excess of it; in the one, the stomach digests to a certain extent; but, confessedly imperfectly; as the ill-concocted mass is hurried from the stomach into the intestines before it can be properly elaborated. In the disease in question, it tarries a still shorter time; and, for the most part, passes with little or no change. Our plan of treating this complaint will be better understood by relating one of a number of cases which have fallen under our notice.

1319. The daughter of L. A., aged ten months, had a pretty serious attack of bilious diarrhœa, in consequence of her teeth passing with difficulty through the gums. She was, however, relieved of this, by small doses of calomel, the occasional use of laudanum, and by cutting her gums. Being an only child, and a great pet, especially with two or three aunts who were doomed to "single blessedness," she was too early indulged in improper articles of food, though she was ordered to be confined to the milk of her mother. She was permitted to taste of every thing she craved, though several of these articles were observed to pass the bowels unchanged—among these were portions of Irish, and sweet potatoes, and raisins. This gave no alarm to the loving aunts, or to the inexperienced mother; and she was permitted for awhile longer to gratify her capricious desires, until the stomach lost control over every thing received in it; and, of course, its contents were transported through the bowels unchanged. We were now again sent for.

1320. There was neither nausea nor vomiting in this case; but the thirst was great; the urine small in quantity; high-coloured, and of a very strong smell. The child began to fall away, and its strength to decline rapidly. We ordered that no kind of food whatever should be given, save that of the milk of the mother, and that only once in four hours, and then not in full quantity. Should the thirst require more fluid than the milk, to satisfy it, by giving from time to time a tea-spoonful of cold water. To put woollen stockings on its legs; flannel it was already wearing on its body. To have the abdomen rubbed three or four times a day, for ten minutes at a time, with the bare warm hand. To not awake the child when asleep, under any pretence whatever; to have her taken across the river in the steam-boat two or three times in the afternoon, when the weather was suitable.

1321. In addition to this, she was to take four drops of chalybeate wine, and a quarter drop of laudanum every two hours, in a few drops of sweetened water, when awake. This plan was pursued for two or three days before any change was perceived; but, at the end of this time, it was observed, that the food remained rather longer in the stomach after nursing, though the milk seemed to pass off unchanged, with some small tinges of brighter yellow than before.

1322. Thinking advantage might be derived from stimulating the external surface of the abdomen more powerfully than by the frictions of the hand, we ordered the tartar emetic ointment in the proportion of a dram of the tartrate, to an ounce of simple cerate; a portion of this to be applied once a day over the whole surface. The quantity of laudanum was increased to half a drop, every two hours; the nursing, drink, and exercise as before.

1323. At the expiration of three more days, the discharges from the bowels were less frequent; the milk was perceived to be slightly curdled;* the bile more evident, the urine rather more abundant, and the skin of a more uniform and natural warmth. The ointment had produced no effect upon the skin; it was ordered to be rubbed twice a day—no increase of nourishment, and the same drink.

1324. At the end of three more days the stools had become less frequent; they bore evident marks of digestion, and were assuming a more decided tone of yellow. The skin was beginning to show signs of irritation: the ointment continued; the laudanum increased to three-fourths of a drop, the nursing, drink, and exercise, to be continued as before.

1325. At the expiration of another period of three days, we found every thing much changed for the better—had had but two evacuations for the last twenty-four hours—digestion much more decided; stronger evidences of bile; the urine much freer, lighter-coloured, and less rank in smell. The skin of the abdomen pretty much irritated. The laudanum was not increased; the nursing was permitted to be a little more in quantity, but not oftener; the water was sweetened now with a little loaf sugar, as the thirst was considerably abated.

1326. Another interval of three days had passed. One stool only per diem, but it was large; some portions of white curd mixed with the new yellow fæces—fæces pretty offensive; urine sufficiently abundant; the abdomen much irritated; the skin and pulse natural. It may be well to observe, that the pulse was little or none affected during the whole time, on which account we did not notice it hitherto in our reports.

1327. As the mother's milk was sufficient in quantity, as well

* In some cases, there appears to be an excess of acid; and the milk passes through in the form of whey and coagulum.

as good in quality, we ordered the child to be exclusively confined to it—but that it might be nursed rather more frequently, to permit the vesications on the abdomen to heal gradually; to continue the laudanum, but much less frequently, say three or four times a day; and, should the bowels now become rather confined, of which, of course, there was a risk, to have them opened by an injection of molasses and water.

1328. The child was now ordered to the country, from which it returned, in about three weeks, in perfect health.

1329. We have found this disease, generally speaking, to be a manageable one, when sufficiently early attended to; but when suffered to run on to the last stage of debility, little or nothing can be done. Or, when it occurs in the adult, it but too generally proves fatal, as it, for the most part, takes place in feeble and worn out constitutions, from hot climates, after chronic dysentery, or diarrhœa.

1330. There are several more varieties of diarrhœa, but of which we have never seen cases; and, consequently, can say nothing from our own experience; nor has the experience of others discovered any certain method of cure. Besides, they appear to belong exclusively to the adult—at least, we have never witnessed them in children; such are diarrhœa serosa, tubularis, and gypsata.

1331. In our account of the several diarrhœas which we have just passed, our histories, and the method of cure, have reference principally to their acute or sub-acute stages. We shall now occupy a few minutes upon these diseases, when they have assumed a chronic form. But it may be proper to observe, it is not necessary to keep up the distinction of species: as they appear to merge into one common form of disease, after they become chronic.

1332. Thus, the feculent, the bilious, and the mucous, may become chronic, and require but little if any variation of treatment. This, especially, happens when these diseases are neglected, about the period of teething and weaning. Several writers have described this disease, as De Salle, Cruveilhier, Hamilton, &c.; but none so well as Dr. Cheyne. Mons. Andral has been very attentive to the chronic form of diarrhœa, and has made many post mortem examinations; they agree very much with those of Dr. Cheyne, as regards the state of the mucous membrane, and of the intestines themselves.

SECT. VI.—*Of the Chronic Form of the Diarrhœa of Infants.*

1333. We have said, that several of the species of diarrhœa already treated of, may be made to run into a chronic form, of very difficult management, as well as of great danger; 1st, by neglect; 2dly, by the continuance of the remote and exciting causes; or, 3dly, by improper treatment: thus, those children who have been too early weaned; improperly fed after weaning, or separated from the breast at an improper time, are more obnoxious to it than those who have been more properly managed.

1334. The form of the disease which we are about to describe occurs sufficiently often in this country, to make it formidable; but is of much more frequent occurrence in Europe. It would seem, also, to be more common in one portion of country, than in another; thus, in Scotland, agreeably to Dr. Cheyne, it is a disease of frequent occurrence; less so in England; and in France, according to De Salle, it was considered an epidemic. There the disease acquired the name of "*Maladie de Cruveilhier*," because this physician first described it there; though it is essentially the same, as that so well detailed by Dr. Cheyne, under the name of "*Atrophia ablactatorum*," or "*weaning brash*."

1335. We have just hinted, that the "*Atrophia ablactatorum*," or "*weaning brash*," was nothing more than the chronic form of the several species of diarrhœa, to which infancy is liable. And though this complaint is confessedly more common, at the period of weaning, or immediately after the child is separated from the breast, it may occur at other periods, and from other causes. Every diarrhœa, after it has continued from fourteen to sixteen days, may be considered as chronic; therefore, the disease so ably treated of by Dr. Cheyne, must be considered only as a perseverance of the common diarrhœa of children, during summer and fall, and not a new or distinct disease. This is confirmed, we think, by the phenomena, the causes, the mode of treatment, and the post mortem examination. For even the feculent diarrhœa, or the cholera crapulosa of infants, may be continued to a chronic form; and when it has assumed this, it presents like phenomena.

1336. Dr. Cheyne, (p. 16,) describes this disease as com-

mencing with a "purging and griping pain, in which the dejections are of a green colour." So do the diarrhœas of infancy, very often, let the period of attack be when it may; for though in the mild forms of this disease, especially in the very beginning, the stools are for the most part yellow, yet they are not so necessarily—for we have a hundred times seen them green from the very first discharge.

1337. "When this purging is neglected, and after continuing for some time, there is added a retching, with or without vomiting: when accompanied by vomiting, the matter brought up is frequently coloured with bile," (p. 16, and 17.) Is this not precisely what happens in all looseness? Nothing is more common in a diarrhœa of some standing, than this affection of the stomach, or this appearance of the matter thrown up.

1338. "These increased and painful actions of the alimentary canal, produce a loathing of every kind of food, and naturally are attended with emaciation and softness of flesh, with restlessness, thirst, and fever," (p. 17.) Is this not the ordinary march of neglected, or ill-treated diarrhœa?

1339. "After some weeks, I have often observed a hectic blush on the cheek; but the most characteristic symptom of this disease is a constant peevishness, the effect of unceasing griping pain, expressed by the whine of the child, but, especially, by the settled discontent of its features; and this expression of discontent, is strengthened towards the conclusion of the disease, when the countenance has shared in the emaciation of the body," (p. 17.) Who has not observed all that is said here, when diarrhœa had become protracted, and was hastening towards a close?

1340. "In the progress of the disease, the evacuations from the belly, show very different actions of the intestines, and great changes in the biliary secretion; for they are sometimes of a natural colour, at other times slimy and ash-coloured, and sometimes lienteric," (p. 17.) Every author who has written on the subject of diarrhœa, describes this mutable complexion of the fæces in this complaint.

1341. "The disease seldom proves fatal, before the sixth or seventh week: I have seen, though rarely, a child recovered, after the disease had continued three or four months; and, again, I have seen the disease cut short by death, in the second, third,

or fourth week, before it had reached its acmé; the sudden termination having been occasioned by an incessant vomiting and purging, or by convulsions, from the immense irritation of the bowels," (p. 18.) Cannot every practitioner of any experience declare, he has witnessed the same abrupt, and unexpected termination of our summer and autumnal diarrhœas?

1342. "The disease is more frequent in children, who have been weaned before the eighth or nine month, and, in particular, in those, who, in consequence of some accident happening to the nurse, have been weaned abruptly," (p. 18.) These observations comport with all experience in this complaint; especially in this country. So well aware are mothers of this fact, that they never wean their children at this period, but from absolute necessity.

1343. "This is a disease of the autumnal months. I have seldom seen it, comparatively speaking, commence before the solstice, nor after the end of the year; and I suspect that it is most general in sultry seasons." This agrees with the periods of our diarrhœas of children, entirely. This complaint is most rife with us, from the beginning of July to the beginning of October. It is, certainly, too, more frequent, in our damp, hot summers. We believe that moisture contributes considerably to the production of this complaint, since the functions of the skin are less perfectly performed than in dry summers. Our present summer, (1825,) is, perhaps, unparalleled in the recollection of any body, at least, for the intensity, and the long continuance of its heat and the dryness of the atmosphere; and is so far, (August,) unparalleled for its healthfulness. The bowel complaints of children are few, and of easy management, when compared with other seasons.

1344. "At the time when weaning brash comes on, the teeth are usually appearing; and from a common notion, that a flux is wholesome during teething, the disease is sometimes allowed to make irremediable impression on the constitution, before the physician is called." In this, there is the most perfect coincidence, with our "summer complaint," both as regards period and consequences.

1345. The post mortem appearances, detailed by Dr. Cheyne, correspond with those made in this country, as well as those by Andral and Cruveilhier, in France. They are every way so in-

teresting and important, that we trust, we shall be excused for quoting them, especially as they are short.

1346. "In every instance, I observed that the intestinal canal, from the stomach downward, abounded with singular contractions, and had, in its course, one or more intus-susceptions; that the liver was exceedingly firm, larger than natural, and of a bright red colour, and that the enlarged gall-bladder, contained a dark green bile. In some dissections, the mesenteric glands were swelled and inflamed; in others, however, these were scarcely enlarged, and had no appearance of inflammation."

1347. "These contractions and intus-susceptions, are entirely of a spasmodic kind, as in the latter, the contained part of the gut was easily disengaged from that which formed its sack; and in no part of the entanglement were there adhesions, or even the marks of inflammation; and the contracted portions of the intestines were again permanently dilated, by pushing the finger into them," (p. 22, and 23.)*

1348. "These appearances lead me to imagine, that the weaning brash, in its confirmed state, is imputable to an increased secretion of acrid bile, or rather to the morbid state of the liver, which occasions this," (p. 23.)

1349. In the chronic form of this disease, we can readily imagine the hepatic system to be deranged; and the secretions of the liver, by being either imperfect in their kind, or acrid in their quality, may over stimulate the already severely irritated intes-

* Intus-susception is, perhaps, among the most frequent causes of death, when this disease has run on so long. It has been observed by almost all writers, that this form of diarrhœa terminates sometimes very suddenly, by violent vomiting, or convulsions. Now, is it not more than probable, in these cases, that the immediate cause of death may have been the invagination of the intestine?

This condition of the bowels would seem to exist much oftener than is suspected; and to an extent that is almost incredible: thus, Mr. Burns informs us, that, in one case, no fewer than forty-seven intus-susceptions were found in the same body; and that invagination of the intestines is the most frequent cause of fatal diarrhœa; that not less than fifty cases had occurred to his brother, in the course of his dissections. (Vol. II. p. 199, James' Ed.)

This condition of the bowels unquestionably occurs, where no suspicion is entertained of its existence; for we have no certain diagnostic of intus-susception. In general, it may, however, be remarked, where there is more than usual pain; bloody slimy stools; violent vomiting, sometimes of fæces, and convulsions, this situation of the bowels may be suspected.

tines, either to profuse secretion, inflammation, inordinate action, or spasm. The first, or profuse secretion, may account for the quantity of the matter discharged; while the others may serve to explain the various appearances of the dejections, their great frequency, the state of contractions, and the intus-susceptions of the intestines. Thus, while the stomach and bowels preserve their powers, or are but very little impaired, we see the fæces of a yellow colour and pretty abundant; or they may be even green, without their being very seriously implicated; provided the tone of green be not very intense, pretty uniform in consistence, and somewhat gelatinous.

1350. When the bowels are more severely irritated, as almost always happens, after the disease has continued for ten or twelve days, and more or less inflammation present, there is strong evidence of the liver participating in the affection, by the increased quantity of bile: this now becomes flocculent, as it were, of a deeper colour, and not unlike green chopped rue, with copious watery discharges. When the bowels are still more urged by increased or more extensive lesion, the stools become of a brown colour, much resembling chocolate, and are extremely fetid. But, should the liver itself be much affected, the fæces may become of a yellowish white, or pus-like.

1351. In the commencement of this complaint, or during what we have termed its acute or sub-acute form, we believe that the stomach and the smaller intestines, are alone deranged; and, hence, when this disease is taken early, and properly treated, it is easily controlled. But, if the exciting cause be continued, and the complaint injudiciously treated, the liver, from its strong and constant sympathy with the stomach and bowels, becomes involved; and when this happens, the disease becomes more severe in its symptoms, and more permanent in its duration—it then constitutes diarrhœa in its chronic form.

1352. The bowels may now be urged to severer duties, by the presence of a greater quantity of bile; and the very irritation arising from this cause, serves both to augment and perpetuate the secretion, by the liver sympathizing with the over-stimulated bowels; so that they reciprocally injure each other. Or, the same effects may follow, and doubtless do sometimes, when the quantity of bile is not augmented, but altered in its quality; or neither, perhaps, need be required in some instances, provided the mucous

coat of the intestine, be inflamed—a circumstance known to occur, by post mortem examinations.

1353. It may be asked, how is it, if bile be not altered in its quality, that it should produce inconvenience to parts over which, in the best health, it constantly flows? There is a law of the system which satisfactorily explains this—which is, that secretions do not injure parts over which they flow, as long as these parts remain sound or healthy; but if they are injured in any way, then these secretions become causes of irritation, and even of inflammation. Thus it happens with the bowels: in a healthy condition, they receive from the bile a healthy stimulus; but if, from any cause, they become irritated, as in the chronic form of diarrhœa, their natural stimulus, the bile may, from their altered condition, become a source of serious mischief.

1354. When this complaint has run on for a long time, especially in children who have been weaned, and have suffered directly from the change of diet, the mesenteric glands are sometimes found inflamed, and enlarged; but this is by no means constant. We have seen death from this complaint, where, upon examination, no injury was found to have been sustained by the mesenteric glands. At other times, we have seen them an entire mass of disease.

1355. Dr. Cheyne asks, “May not this (the enlargement of the mesenteric glands) proceed from the acrid nature of the alimentary matter, to which their absorbing mouths are exposed?” (p. 27.) We believe this to be the fact; and that their swelling, or becoming inflamed, was an effort to arrest the farther progress of this acrid substance, as a bubo does the venereal poison.

1356. Dr. Cheyne, after having stated his opinion, as just noticed, that a morbid condition of the liver and its secretions may be the cause of “weaning brash,” very modestly declares himself afraid of attempting an explanation of the phenomena. He, however, proceeds to do it in the following manner:—

1357. “The breast milk is a mild food, adapted to the powers of the child: I shall not say, the weak powers of digestion in the child, but rather to the peculiar powers, and properties of the secretions. When the child is weaned abruptly, and put upon common food, this becomes too violent a stimulus to the intestines. Between the liver and intestines, there is the most intimate relation. This excited state of the intestines, causes a dis-

charge of bile into them, which increases the stimulus, and assists in maintaining the purging. Had the original cause been accidental and transitory, the bile, like the operation of a smart purge, would have thrown off the offensive matter and cured the complaint; but crude unfit food, being still poured into the stomach, the disease must proceed. It is probable, therefore, that, in the first instance, a redundant secretion of the bile, which may also be an acrid and imperfect one, originating from an irritation of the stomach, is a salutary exertion of the system, to remove the cause of the irritation from the intestinal canal. But I think it, likewise, probable that the frequent repetition of this effort, brings the liver into such a state, that it cannot return to the performance of its ordinary and natural function, when the demand for its unusual action ceases; and it is in this manner that the disease may continue, after the original stimuli have been removed, by putting the child upon a proper diet."

1358. "The dejections are sometimes ochrey, or even clay-coloured, which does not seem to favour the idea of a redundant secretion of bile. However, they continue pale but a short time, and soon resume the thin consistence, with their dark colour. The explanation of this, I presume to be, that, during this interval, the spasmodic contraction may have seized the duodenum at that part where the common duct emulges the bile into the intestines. And, farther, I presume the intestines have now become so irritable, that they are stimulated to inordinate action by the aliment, even at the time, when, from the supposed stricture of the duct, the bile may be deficient; and, hence, the griping pain still continues."

1359. "But it may be, and, most probably, is in the ducts, that the explanation of this irregularity, in a great measure, is to be looked for. I have, upon dissection, found the bile collected in such quantity in the gall bladder, that this accumulation became the cause of the confinement of the bile; for then the natural curve which the cystic duct takes, becomes so acute, and the distended bladder presses so much upon it, that the bile is prevented from flowing, or flows in very small quantity. By this retention, the bile becomes more concentrated, and thence, perhaps, more acrid. And, finally, by some action of the stomach and duodenum, by which the very enlarged gall-bladder is compressed, part of its contents is forced out; the distended ducts are relieved, and the intestinal canal is inundated with bile," (p. 24.)

1360. Dr. Cheyne farther observes, "Notwithstanding my most diligent inquiries, I have seldom been able to deduce any of the derangements of the infantile system from teething; and I have been inclined to think, that those physicians who have represented this function as teeming with danger, have not accustomed themselves to that careful investigation, without which these diseases cannot be understood. The weaning brash, I have the strongest reason to believe, has no connexion with teething, farther than they sometimes meet in the same child. I have known this disease, in many instances, where the gums were neither swelled, nor indurated, nor inflamed, and where there was no salivation, nor the least appearance of pain in the mouth. I have seen it where children were cutting their teeth easily; and where many of them came without difficulty before weaning; still the disease has supervened. But, perhaps, the strongest argument that can be used, would arise from the observation which I have frequently made, that this disease occurs in children of three months; and I have often known it several months before teething came on."

1361. We have already expressed our belief, (p. 322,) that teething in itself is no disease; but that, in many instances, it either calls into action some latent disposition to disease, or aggravates any that might be present during the continuance of that process. If teething were a disease, strictly speaking, it would be more uniform in its consequences, or present phenomena peculiar to itself; but this it does not always do; for we have many times known teeth to make their appearance, long before the ordinary period, and when they were not announced by any one of the usual phenomena. We have also known them make their way so silently, and this about the period at which they might be looked for, that the only knowledge of their approach was their presence. All this we say in confirmation of Dr. Cheyne's observation.

1362. But, on the other hand, we are equally certain, that the process of teething disturbs the system under particular circumstances, and that sometimes very powerfully, by calling into action, certain dispositions, which cannot very well be subdued until the disturbance in the gums, or the local, or teething irritation, if you please, has been either moderated, or subdued. Therefore, when this subject is looked at in a practical point of view, it must

be considered almost a dispute about words; for whether the act of teething be a disease in itself, or whether it excite those which are latent, or exalts those which may be present, we must regard the circumstance of teething, as one well meriting the attention of the practitioner: and, farther, if he disregard the practical hints this operation affords him, we fear he will often protract the sufferings of his little patient, or sometimes even witness its death.

1363. In the disease in question, we are certain that the most decided and prompt benefit has arisen from incising the gums: and when the teeth are really aggravating the complaint, it is in vain we prescribe remedies, unless we remove this source of irritation from the constitution, by aiding nature to push these bodies through the irritated or inflamed gums. We must, therefore, very often regard cutting the gums, as one of the remedies proper in the "weaning brash."

1364. For the prevention of the "weaning brash," Dr. Cheyne advises, that, as this disease appears "much oftener in the autumn than at any other time of the year, that delicate children should at that season be kept a month or two longer at the breast than might be thought necessary at any other, rather than be exposed to the pains and hazards which never fail to accompany this disorder," (p. 33.)

1365. This advice is in strict conformity to the usage of this country: it is so well understood by every body here, that a physician is rarely consulted about its propriety. During the months of June, July, August, frequently September, weaning is never performed as a matter of choice, let the age of the child be ever so proper, unless it have completed the cutting of its first set of teeth. The dread of our females, in this country, is the "second summer."

1366. No fact appears to be better ascertained, than, that the "second summer," is one of severe suffering, and oftentimes one of great hazard to our infant population. Every mother seems to be aware of the disposition of the bowels to become diseased at this period of the child's life; but she limits the apprehension, almost exclusively, to the consequences of "teething." We have already declared our belief in the agency of this act, when untoward, in the production, or aggravation of the complaints of the bowels; but this is only one of the sources of evil, to the poor

weaned child at this period—the change of diet immediately after this has taken place, as has already been observed, is another.

1367. In keeping the child, then, at the breast during the months of the second year, as above specified, is most decidedly, but tacitly acknowledging the influence of the long-continued operation of a hot sun, upon the tender system, of children, rather than proving the direct agency of teething in producing their bowel complaints; since they are, during the first summer, at those periods of greatest heat, very liable to diarrhœa, though this disease may be, and but too often is, aggravated in the second year by the process of teething.

1368. Our long summer heats, generate “disposition” to disease, in both the hepatic, and intestinal systems; and, of course, require, at such periods, but slight exciting causes, to arouse them into action; and these causes, unfortunately, are so numerous, and of such certain application, as to give the child in its “second summer,” but a poor chance to escape with impunity. Our children are tempted at this period of their lives, and at this hot season of the year, by the offering of fruit, in every stage of immaturity; or of an over quantity of that which may be perfect. They are liable to receive from the hands of but too many inconsiderate people, food of the most improper and indigestible kind; and, at the same time, they are menaced with all the “penalties” of difficult dentition: can it then be a matter of surprise, that, at this period, they should be assailed by disease, or that they should succumb under its influence?

1369. It is confirmed, by multiplied observation, that at no other periods of the year, is there the same risk in weaning, as in the commencement, and at the termination of our summers; and this from the causes we have just mentioned: they are, therefore, eschewed with the utmost care, when there is a choice upon the subject. Is this not a farther proof, that the effect of season is more to be dreaded, than the mere process of dentition? since, at other portions of the year, weaning may take place with impunity, if the organs of digestion be sufficiently confirmed by age, to bear a change of diet, though teeth may be pretty rapidly pushing through the gums? Again; it is a fact perfectly well known, that children are born in every day of the year, consequently, they must cut their teeth at every period of the year:

yet, but one part of this time, is considered dangerous for this operation; and the supposed direct consequences of this act, namely, diarrhœa, is familiarly called the “summer complaint of children!” It, therefore, only amounts to what we have already attempted to prove, that teething is but the exciting cause of diarrhœa.

1370. To diminish the risk at this period of life, the remote and the exciting causes of diarrhœa, or “weaning brash” must be as far as possible avoided. 1st, Of the remote causes. The utmost attention should be paid to the clothing of the child, (see Book I. p. 83, par. 226,) that it may not suffer from either an excess or deficiency of it; 2dly, it must be protected against the chilling effects of a damp and cold atmosphere, by removing it from it, when practicable, as in certain locations; prohibiting its exposure to the dews of the evening, or to the fogs and dews of the morning; to forbid, or rather to prevent, the injudicious use of the cold bath, &c.; 3dly, to guard against the direct effects of heat, by not exposing it to the hot sun, and to the too cool shade, after such exposure.

1371. 2. Of the exciting causes. By being vigilant that the child may not receive injury from improper food; as crude fruit, indigestible meats, or vegetables; 2dly, that the child be not nursed immediately after the mother or nurse has been overheated, or recovering from a fit of anger, or any convulsive action of the system; nor to persevere in the use of the milk of the breast, after evidence has been exhibited of its being of bad quality, either from its age, its imperfect elaboration, or the return of the catamenial discharge; 3dly, to remove the irritation of teething, when this manifestly arises from the condition of the gums, by freely, and sometimes repeatedly, lancing them; 4thly, by protracting the period of weaning, until some time after the forbidden months, (638;) 5thly, by not weaning at too early a period of the child’s life though the season of the year be proper; 6thly, by gradually accustoming the child to a change of proper diet, provided it have a sufficient number of teeth for this purpose. (See Book I. par. 695, et seq.) where we have sufficiently explained our views upon this point.

1372. We firmly believe, that, were these directions strictly complied with, it would rarely happen that children would be afflicted with diarrhœa, in either its acute or chronic form. We

believe this, because we have more than once witnessed an entire exemption from diseases of this kind, even in large families, where strict attention has been paid to these points.

SECT. VII.—*Of the Treatment of Chronic Diarrhœa, or
“ Weaning Brash.”*

1373. Every body has experienced the difficulty of removing a diarrhœa, after it has taken a chronic form. This arises from several causes: 1st, because, the hepatic system is now involved with the intestinal, (1278 and 1349,) in maintaining this complaint; 2dly, because, the stomach and bowels, independently of the condition of the liver, are seriously affected, by either inflammation, (1346,) ulceration, contractions, or intus-susceptions; 3dly, because, very often, the irritation is maintained by the presence of worms, which are sometimes difficult to dislodge; 4thly, because, the influence of habit is added to the original disposition to too frequent dejections.

1374. When the first cause of difficulty alone prevails, the disease, for the most part, is of pretty easy management; the symptoms here may consist of too frequent discharges, of a green, slimy, or curdled appearance; with loss of appetite, nausea, and sometimes vomiting, and of increasing emaciation, the skin almost always dry, and very warm where covered; the urine scanty, and high-coloured; the thirst great; and the disposition fretful, whimsical, or sluggish.

1375. Three indications here present themselves: 1st, to alter the nature of the actions of the stomach, bowels and liver; 2dly, to abate the frequency of the discharges; and, 3dly, to restore the lost strength of the parts immediately concerned, and the system in general.

1376. The first indication must be fulfilled by freely emptying the bowels by castor oil, rhubarb or calomel, and then, by giving small doses of calomel; that is, from a quarter to half a grain, morning and evening, with three grains of prepared chalk, and from a tenth to a twentieth of a grain of opium, according to the age of the patient. The second must be attempted, either by rhubarb, or the cretaceous mixture: by rhubarb, during the day, in the form of syrup, taken every three hours, in the dose of a tea-spoonful, or half a tea-spoonful, with half a drop or a

drop of laudanum, according to the age of the child, the degree of pain, or as the motion of the bowels may be more or less frequent; always proportioning the quantity of the laudanum, and the frequency of its exhibition, to the exigences mentioned. At night, a sufficient quantity of laudanum by the mouth, or by injection, should be given, to keep the bowels quiet until the morning.

1377. By the cretaceous mixture, when there is evidence of a prevailing acid in the evacuations. This may be known, 1st, by the green being light, and the evacuations watery; 2dly, by the smell; 3dly, by the appearance of portions of hard curd among the fæces: 4thly, by the discharges becoming greener by standing; 5thly, by the matter vomited, should vomiting attend, smelling sour, and the milk coming up in strong curd; 6thly, by a dense white coat upon the tongue, which is a stratum of milk coagulum.

1378. The best form of giving the mixture, is as follows:—

R.	Creta. ppt.	ʒiij.
	Tinct. Thebaic.	gut. xx. vel. xxx.
	Ol. Cinnam.	gut. j.
	Sacch. Alb.	ʒij.
	Aq. font.	ʒijj. M. f. Julap.

A tea-spoonful of this must be given every two, three, or four hours, as it may influence the motions of the bowels. Where the motions of the bowels is kept up by acidity, the effect of this remedy is sometimes so prompt, that two or three doses, will entirely suspend the discharges—therefore, wherever this effect is observed, the medicine should be suspended, until the recurrence of a fresh necessity.

1379. If it do not show this decided control over the motions of the bowels, it will, nevertheless, if the greenness of the evacuations depend upon an acid, very much abate their frequency, and change their green appearance to yellow; but should it depend upon bile, it will have little or no effect. It may be persevered in, as necessity may require. But we always feel it important, in such cases, to tranquilize the bowels during the night, by a suitable dose of laudanum.

1380. Should, however, the motions of the bowels be too long arrested, that is, beyond eight or ten hours, an injection of molasses and water, or flax-seed tea should be given; and, if necessary, it may be rendered more stimulating, by the addition of a little

salt. In this way, the motions may be kept in subjection, or rendered obedient to the wishes of the physician. During the whole of the time, the most particular care must be paid to the diet and drinks of the patient.

1381. Nothing heating or stimulating, should be given, either as nourishment or as drink; and every species of liquor, animal food or broth, must be prohibited, if there be the slightest evidence of fever. The diet must consist only of such articles, as the stomach can best manage, as milk and water, gum Arabic and water, very thin arrow-root, sago, or tapioca, rennet whey, barley water, or rice water. Nothing solid of any kind, should be given. The occasional use of melted butter, is found oftentimes highly advantageous; in every state almost of chronic diarrhœa; but is especially so, where there is a predominance of acid, and where there are sparing stools, accompanied by hard curd, and a whitish mucus from the bowels tinged with blood. It is made by pouring boiling water upon a lump of perfectly sweet butter in a tea-cup, and stirring it until it is melted; a tea-spoonful is skimmed from the top, and given several times a day.

1382. It may be well to observe, that during the period in which too much acid prevails, but a very small quantity of milk should be used, unless it be reduced by lime-water—in this state of combination, it may be given; or, if there be but very little fever, or none, chicken or beef tea may be used, instead of the vegetable jellies above mentioned; with the exception, perhaps, of the gum Arabic water. We are in the habit of continuing this mucilage throughout the complaint, where it does not disagree, or where the child does not refuse it.

1383. The third indication may be fulfilled, by the proper use of diet—permitting the use of weak broths, without vegetables being boiled in them, with the exception of rice; but even this must be strained from them before they are given. A soft-boiled fresh egg, may after awhile be given; a portion of ham may be sucked; or a little well-boiled rice, with sugar, very fresh butter, and a little nutmeg, may be made to follow from time to time.

1384. But if the child be weaned, nothing will so certainly contribute to its recovery, as its restoration to the breast, when practicable; or, if the child be at the breast, and there is room to suspect the quality of the milk, a fresh nurse should be immediately procured. Should the teeth be in fault, the gums should

be freely cut. Suitable exercise must be instituted; and, when practicable, the child should be sent to the country for the benefit of a change of air.

1385. Where the second conditions (1373) obtains, the disease must be considered not only very far advanced, but highly dangerous; for it must not be concealed, that more or less danger must attend an inflammation of the mucous membrane of the intestines. Have we any certain marks, to distinguish this condition of the bowels? It may be suspected, where the pulse is very much accelerated; where the child is extremely restless; drawing up its feet and thighs towards the abdomen; crying loudly, or moaning frequently; if pain be increased by pressure upon the abdomen; if the skin be hot, and parched; if the evacuations be extremely frequent; a disposition to tenesmus; if the evacuations be sparing, slimy, or bloody, though frequent; if the thirst be excessive; and the tongue dry, red, and tender. All these symptoms, or the greater part of them may attend an inflammation of the mucous tissue of the intestines.

1386. The indications here, are, 1st, to abate the local inflammation; 2dly, to change the nature of the secretions of the liver and bowels, and to allay the irritation of the intestines; 3dly, to diminish the frequency of the discharges; and, 4thly, to restore lost strength.

1387. The first indication must be attempted to be fulfilled, by local depletion, by leeches; by the occasional use of the warm bath; by blisters on the abdomen or thighs. The second, by the exhibition of the calomel in alterative doses: and by small, but repeated doses of castor oil. The third, by the occasional use of laudanum enemata, when they can be retained; or by its exhibition in small, but repeated doses, by the mouth. And the fourth, by proper diet, as above proposed; by exercise; and by removal to the country.

1388. In this, and in the subsequent stage, it may be proper to observe, that nothing but rennet whey, or weak gum Arabic water should be given as nourishment, and even these in but very small quantities.* The thirst is best slaked by a tea-spoonful of cold water, given from time to time.

* We are persuaded, that one of the most operative causes against recovery, in every bowel complaint, is the too frequent exhibition of food, both proper and improper; especially during its active stage. The fear of weakness leads incen-

1389. When this disease is still more advanced, and has been of long continuance, we have a right to suspect, what has been but too often proved by dissection to happen under such circumstances, contractions, ulcerations, and intus-susceptions. We have no diagnostic symptoms for these conditions of the bowels; and, if we had, it might be justly doubted whether the knowledge of them would lead to any valuable practical end. We fear that, in these cases, no other plan can be pursued, but a temporizing one; for it is to be presumed, that every effort has been made during the previous stages of the disease, to arrest its progress. Therefore, we need but rarely flatter ourselves with the hope of a recovery, where the emaciation and weakness are extreme; where nothing, or next to nothing, can be retained upon the stomach; where the abdomen becomes tympanitic; where there is almost a total stoppage of the secretion of urine; and where the stools are extremely offensive, dark brown, large in quantity, and mixed with either blood or a puriform matter, or both; and, above all, when these are very frequently, and involuntarily discharged.

1390. We have frequently known the bowels to continue to be purged, and that for a long time, by the presence of worms in the alimentary canal. We always suspect this cause, when the complaint has resisted the usual remedies; where the teeth cannot be in fault; where there is no appearance of bile, and especially, when the stools are of a dark brown colour, very thin and very offensive. The child, also, may have a tumid belly; a strong, or offensive breath; a furred tongue; a voracious or diminished appetite; itching of the nose, and sometimes regular febrile paroxysms.

1391. We in such cases treat the disease as a worm case; either by pink-root, worm-seed oil, or calomel. We always give a decided preference to the first remedy, where it is practicable to get the child to take it. And we may almost always succeed in doing this, with children who are of sufficient age to sit at table,

santly into error, on this subject; and neither reason nor experience is capable of destroying this absurd and dangerous practice. Every body would at once acknowledge it to be, not only preposterous, but even cruel, to place an additional weight upon the shoulders of a man who was staggering under the load already laid upon them; but they would think it right to do what is equally absurd and cruel to the stomach, by forcing upon it a fresh quantity of food, when it had not power to dispose of that which it had previously received.

and who are in the habit of drinking coffee, by using the pink-root in the following manner:—

1392. Take the proper quantity of pink-root,* and pour upon it about half a pint of pretty strong boiling coffee, and permit it to draw—pour off one-half into a cup, sweeten it, and put milk or cream in it, and give it to the child, as if it were pure coffee, (for it is not to be informed it is not,) it will drink this almost always without the slightest hesitation. It will receive the other half at tea-time, managed as before. This must be repeated for three days, consecutively: on the fourth, should the bowels not be opened, (for it almost always stops the discharge in this period,) let the child have a dose of castor oil, or a few grains of calomel.

1393. It must be observed, we have seen a stop put to a diarrhœa of very long standing, by a few doses of the pink root, and this, sometimes, without any ocular proof that worms were the cause of it—we have, therefore, for many years past, made it a rule, to exhibit this remedy, when the complaint has resisted the ordinary means.

1394. If the pink-root cannot be given, the worm-seed oil may be substituted,† but it is by no means so certain. If neither can be given, or if there be too much fever for the worm-seed oil, (for it should never be given at that time;) the calomel may be used, and sometimes with the most prompt and decided advantage.

1395. The following case, which has lately been under our care, will illustrate this practice very well. A child of C. E. C. was weaned at four months, in consequence of the illness of the mother. It was, however, very well nourished by the bottle; it throve well, and had several teeth before it was seven months old. It was attacked in the month of June with a bowel complaint of the ordinary kind, from which it was pretty speedily relieved by calomel, &c. In July it had a return of this complaint, with more violence than formerly; owing, it was supposed, to several teeth that were making their appearance.

* The dose of this article may be from a quarter of an ounce to half an ounce. The first quantity will do for children, from ten months to a year; one-third of an ounce, from this time to two years: half an ounce from this period to seven years old.

† There are printed directions for its use, accompanying each bottle of the oil.

1396. The gums were considerably swelled, and inflamed; and the child slavered very freely. Its lax was very profuse, but the stools were of a good colour. The teeth were liberated by lancing the gums; the diarrhœa abated by the use of calomel, syrup of rhubarb, and a testaceous mixture, and the child sent to the country to recruit. About a fortnight after it had been there, the bowel complaint returned with considerable severity; its evacuations were very frequent, bilious and offensive. The former remedies were again tried, but not with the former success. The child began to emaciate; to become sick at stomach, voiding green, acid and watery stools. By the use of absorbents, and very small doses of calomel, he was again relieved; but this was but for a short time.

1397. The bowel complaint became now very severe; the belly was much enlarged; the urine nearly suppressed; the child very languid and fretful; its food would frequently pass through it without change; it would almost every day have a kind of spasm in all the muscles of the body, which would last sometimes for many minutes together, and these would be repeated three or four times a day. A regular paroxysm of fever established itself at six o'clock, every evening, which would terminate next morning in a profuse perspiration; the child was incessantly picking its nose, was very fretful, and whimsical; appetite sometimes good, at other times would refuse every thing. When the febrile paroxysm was off, the pulse was pretty natural; its tongue was much loaded, and its mouth studded with many little painful pimples, and ulcerations, a great quantity of very tenacious, transparent saliva flowed constantly, even to annoyance. The child was now turned of ten months, and had ten teeth; the gums were carefully examined, but there was no swelling of them, to lead to the suspicion, that dentition was the cause of the symptoms.

1398. Believing there were worms in the case; knowing the impossibility of giving the pink-root, and that the system was not in a situation to receive the worm-seed oil, we determined on the use of small but frequently repeated doses of calomel, as in the following formula:—

R. Calom.	ppt. gr. iij.
Creta.	ppt. ʒj.
Gum.	opii. gr. ss.
	M. div. in. xij. parts.

1399. One of these was ordered to be given every two hours, until bed time, at which time six drops of laudanum were to be taken. On our visit the next morning, we learnt the child had passed two worms, and was evidently much relieved.* The bowels were much less frequently moved. The powders were ordered to be continued. The medicine operated pretty freely the next day—brought away nothing very remarkable, except dark green slimy bile. The powders were continued, and was informed the day after, (being indisposed, did not see the child,) that the child had passed, the previous night, a knot of worms of the size of a nutmeg. This was all the information we received, but that the child was very well.

1400. Habit sometimes perpetuates the discharges from the bowels; this cause may be suspected when the evacuations occur at nearly stated periods of the day; when they are not continued through the night, and when the digestion goes on well, and the stools look natural. Children, from the long continuance of diarrhœa, and those of sufficient age to feel a sense of shame, and especially those who have been schooled into good habits in regard to their evacuations, are always sure to obey the first impulse, or warning, the bowels give, that a discharge is about to take place, and by this means, no doubt, have provoked an evacuation, which a little self-command might have checked. By this means almost all influence over the sphincter is lost, and the discharge is maintained from habit.

1401. Laudanum we have found the best remedy for this kind of diarrhœa, especially when combined with prepared chalk; it should be given as frequently as the state of the bowels would seem to require—that is, given immediately after each evacua-

* The character of these worms, as far as we could judge of them in their mutilated state, was altogether different from any we have seen; and entirely different from each other. We regret that sufficient care had not been taken of them, to prevent injury. One was about double the length of the other; it was of a dark brown colour, broader at the tail extremity than at the head. It was seen, by the aid of a strong glass, that the head was of a triangular form, and evidently had two osculi. The body was so much injured by compression, that we can say nothing certain about it. The other was about four inches in length; of equal thickness throughout: of a pale yellowish red, transverse lines very near each other through the extent of the body; the position of the mouth appeared to be transverse, and the head obtuse and round.

tion, and telling such as can comprehend the instruction, not to obey the desire as long as they can possibly resist it.

CHAPTER XXVIII.

OF CHOLERA INFANTUM.

1402. This is a disease almost peculiar to the climate of the United States. Children, in other countries, are liable, during dentition, or from other causes, to various affections of the alimentary canal, all of which differ from our endemic.

1403. The exciting causes are, improprieties in diet and clothing; and it is, likewise, very often aggravated by teething, worms, by premature weaning, and by a variety of adventitious circumstances.

1404. Cholera infantum makes its approaches in different ways. In some instances, it comes on as a simple diarrhœa, though the stomach is also very apt to be affected; and in its more violent forms, there are vomitings and purgings, attended by no inconsiderable spasmodic uneasiness, constituting the cholera morbus of farther advanced life. In its ordinary forms, the fever, which soon supervenes, is of an irregular remittent character; the exacerbations being highest in the evening. The pulse is usually small, quick, and feeble, or irritated and corded; but rarely full, strong, or voluminous. Determinations to the brain, or, at least, this organ seems early to be affected sympathetically; as is manifested by a tendency to stupor or delirium, or sometimes even frenzy. The eyes, also, denote this cerebral affection: they are either fierce, or languid in expression; and when the patient sleeps, are half closed. Thirst is intense, and for a time really unquenchable—cold water is clamorously demanded, but if swallowed, is instantly rejected.* An unequal

* We are, however, disposed to believe this would not so generally happen, were this article more judiciously administered, than it usually is. From the vehemence with which drink is seized by the little sufferer, it is evident how severe the thirst must be: to relieve this, water is given to it in full draughts, and is sometimes violently rejected, before the last portion has arrived at the stomach.

The child instantly renews its supplications for drink; and this with a counte-

distribution of temperature commonly exists; the head and region of the stomach and bowels being hot, while the extremities are cold.

1405. The appearances of the evacuations from the bowels, are various. The natural fæces are mostly retained, though occasionally small lumps may be found involved in the other discharges. These are sometimes thin and watery; and at other times thicker and more tenacious; consisting chiefly of slime, or mucus occasionally tinged with blood. The colour may be green, or yellow, or white, or brown; and may be inodorous, or exceedingly offensive. Commonly, however, the smell is that of sourness, or of putridity. The irritability of the alimentary canal is sometimes so great, that the ingesta rapidly pass off unaltered, as in lientery.

1406. We have few diseases in which emaciation so rapidly takes place, or where, in its latter stages, there is a greater alteration of general condition and aspect. The child, at first, becomes pallid, and the flesh flabby; and so completely is the fat ultimately absorbed, that the integuments hang in folds; and in those parts on which the body rests, livid spots appear, followed by ulcerations.

1407. The skin on the forehead is tight, as if bound to the bone; the eyes are sunk; the cheeks fall in; the nose is sharp;

nance so beseeching, and a manner so earnest, that no resolution, scarcely, can resist the appeal, though there may be the most perfect conviction of its mischievous tendency. Again it is presented, again it is swallowed, and again it is thrown up—and so it would proceed, were the demands constantly supplied, to an indefinite period.

Much resolution is required, for much firmness must be exercised, not to comply with these insatiable demands; or, at least, to the extent that would satisfy the craving and anxious child. But its vehemence may be amused, if not absolutely diminished, by exhibiting the water by tea-spoonsful, and this as warm as it can well swallow it; for such is its desire for something fluid, that it will swallow the hot water as readily as the cold; or, if it like it less, it will sometimes be less importunate in its demands.

We have several times seen the most prompt advantage result from exhibiting to the little sufferer very small pieces of ice, every few minutes. It seems more certainly to abate thirst, and at the same time tranquillizes the stomach better than water: on this account it always deserves a trial with children of sufficient age not to be injured by its being received in its mouth, at the risk of getting into the windpipe.

and the lips are shrivelled. Even under such circumstances, which would seem to denote immediate dissolution, life will, in some cases, be preserved for weeks, and a recovery finally take place. The belly becomes tumid, from flatulence; the feet still more frequently are œdematous; aphthæ appear; the mind, as well as the senses, which hitherto may not have been impaired, are now obtuse, or so entirely lost, that the child lies unmoved by ordinary excitements, and will even allow flies to collect on the face, without being irritated or disturbed. This form of the disease will sometimes continue for five or six weeks. But as death approaches, a gradual aggravation of symptoms takes place; and there is one, which, as far as we have observed, has always proved fatal;* it is a crystalline eruption upon the chest, of an immensity of watery vesicles, of a very minute size. The best idea we can convey of the appearance of this eruption, is to imagine a vast collection of vesicles, apparently produced by flitting an equal number of very minute drops or particles of boiling water, and each particle producing its vesicle. We first pointed out this appearance to our friend, Dr. Physick, in the year 1794, in the disease now under consideration; and, subsequently, under like circumstances, to Dr. Rush; both of whom acknowledged the eruption was new to them.

1408. This symptom may readily escape observation, if not looked for, it requires that the surface on which it has spread itself, should be placed between the eye and the light, and viewed nearly horizontally.

1409. There is another symptom which attends the last stage of this complaint, which is much more common, but not less fatal; which is the thrusting of the fingers, nay, almost the hand, into the back part of the mouth, as if desirous of removing something from the throat. The popular opinion is, that there is a worm irritating the back part of the fauces. And we may mention another, which we do not remember to have seen noticed, which is, the escape of a live worm or worms in the chronic stage of this affection. If the worm come away dead, there is nothing in the circumstance; but, if alive, it is a deadly fatal sign. We have remarked the same in dysentery.

* A few months since, we saw this eruption on the chest in a lad of eighteen, to whom, our friend, Dr. Hays, called us in consultation. In this case, recovery took place, after a very long and very severe struggle; the original complaint was fever, with hemorrhage from the bowels.

1410. In other cases, however, especially where this endemic puts on the character of cholera morbus, or dysentery, its progress is more rapid, and runs, in all respects, the course of these affections. Death, in the former of these instances, will sometimes take place in a few hours; and, in the latter, from three to ten, or fifteen days.

1411. The symptoms of this disease are so peculiar, and so well defined in the genuine forms, that it will always be recognised without difficulty; therefore, we need not dwell upon its diagnostics. And, where it imitates other affections, as cholera morbus, or dysentery, or diarrhœa, it may be considered as essentially such, requiring no difference of treatment. Cases most resembling it, are some of those brought on by the irritation of teething. Even here, however, the treatment is analogous, so that no nicety of discrimination is required; though there are circumstances in the season of the year; the wide spreading of cholera infantum; independently of symptoms, which will enable us to do it.

1412. The prognosis is far more difficult; since death sometimes happens, most unexpectedly; and recoveries take place, in a state of things apparently desperate. In the most violent form of cholera morbus, it often proves suddenly fatal. But cholera infantum, in its ordinary forms, may be considered as doing well, where the pulse becomes slower, fuller, and more natural; where temperature is restored to the surface, and equally diffused; where the irritability of the stomach and bowels subsides; and, above all, where the alvine discharges, previously denoting the want of bile, now consist of dark bilious, offensive, or inodorous matter, or exhibit a more healthy aspect. Till this happen, or, in other words, unless the liver is restored to its natural functions, it may be laid down as an invariable rule, that convalescence does not take place.

1413. An opposite prognostication may be made, or, at least, imminent danger is to be apprehended, where there is an absence of the favourable signs just enumerated; and, particularly, where, with a cold damp surface, there is a small thready pulse; lank, haggard countenance; incessant puking of whatever is received; purging of a pink-coloured fluid, or of greasy fetid water, or of a dark flocculent matter, attended with extreme nervous sensibility, or an entire extinction of it; the child lying stupid, with its eyes half closed and deeply sunk, or with occasional convulsions.

1414. In protracted cases, the eye-balls become perfectly blood-shotten; mimicking a genuine inflammation: but it is nothing but a case of pure error loci; and must always be regarded as a bad, but not necessarily a fatal symptom—we have seen some few instances of recovery, after it had taken place. One who is not experienced in this disease, may encourage hopes which can never be realized. At this period of the complaint, or rather just before its fatal termination, the eye sometimes has its brilliancy and vivacity renewed, after it had been a long time nearly extinct; the general symptoms seem to abate; the child receives food, even greedily: and manifests an intelligence that truly astonishes. But the practised eye sees nothing in these changes, but the immediate forerunners of death.

1415. Dissections clearly inform us of the seat and nature of cholera infantum. The brain presents no morbid appearances, in recent cases, except those of congestion; but in the protracted forms, effusions are often met with, constituting hydrocephalus.

1416. The viscera of the thorax are rarely affected. It is on the contents of the abdomen that it mainly expends its force. The effects of previous inflammation may be traced in some cases, throughout the whole of the alimentary canal; though it is in the mucous membrane that they are principally to be found. Dark livid spots, are dispersed over this coat of the stomach, and of the small intestines, particularly the duodenum, near to the pylorus. Coagulable lymph is also, in some instances, spread on their surface, or is found in detached pieces. In many parts, there is an alteration of structure, by the thickening of their coats; so much so, that the caliber of the tube is considerably reduced.

1417. The large intestines are seldom involved in this mischief; and, perhaps, never, excepting where the disease assumes the dysenteric form. Now and then appearances similar to those of the primæ viæ, may be seen upon the peritoneum, though not to any extent. The liver, under almost all circumstances, and especially in cases of long continuance, is greatly enlarged, so as sometimes to occupy two-fifths of the cavity of the abdomen. But, though thus increased, there is not any very evident derangement of structure. It is merely distended, or swollen, by congestion; and, on this account, is more firm and solid, than natural—a state of things, evidently induced by torpor in the portal circulation. The gall-bladder, in some instances, is found filled with dark

green bile, and, at other times, with that which is pale, or nearly colourless.* The other viscera of the abdomen are usually healthy. It may, however, be proper to add, that the contents of the bowels, for the most part, consist of a thick, tenacious mucus, involving small lumps of fæcal matter, occasionally coloured by bile. When this disease causes death, by assuming a chronic form, it very much resembles the chronic form of diarrhœa, or weaning brash.

Treatment.

1418. The disease, as already stated, usually commences with a very disordered state of the alimentary canal; and it seems to be admitted, that our earliest endeavours are to be directed to the evacuation of the stomach and bowels. As regards, however, the precise course to be pursued, to effect this purpose, there is not the same unanimity of opinion. Generally, purgatives are employed in preference to emetics; and especially the castor oil. Cases of a mild nature, may undoubtedly be treated in this way, and, particularly, if laudanum be occasionally added, when there is little or no fever. But, in the more violent forms of the disease, attended by vomiting, it will be impossible to get such medicines to be retained. It is, therefore, necessary that we attempt to allay the irritability of the stomach.

1419. For this purpose, there is nothing so certain, or so prompt, as an injection of a gill of warm water, in which is dissolved a large tea-spoonful of common salt: this is for a child of a year old and upward, proportionably less for younger. And, however frequent the discharges may be *per anum*, it must not be regarded: the injection must be given. If it operate immediately, and bring with it a fæcal or bilious discharge, the stomach becomes almost immediately quieted, and may then be repeated only *pro re nata*—that is, whenever the vomiting may be severe. Should it not bring any thing off, it must be repeated; and an attempt made to force it high into the bowels; or, should the vomiting not cease, we must again have recourse to it.

1420. This repetition of the injection will either procure the discharge required, or it will produce a most salutary irritation of the rectum, on which its chief efficacy depends. We would wish this fact to be remembered; for a common injection of molasses,

* We have, in two or three instances, seen the gall-bladder filled with a fluid nearly as white as serum, and of but little more consistency.

oil, and water, will do little or no good, though it may procure a stool, as it lacks the stimulating ingredient, the salt, on which its virtue depends. So decided and effective is this simple plan, that we have a hundred times seen it relieve entirely, almost without the aid of any other remedy.

1421. The great *desideratum* in cholera infantum, is to tranquillize the stomach; if the disease have been provoked by any irritating matter in the stomach itself, it should be our first endeavour to remove it, by encouraging the puking, by draughts of warm, or even cold water, where the warm will not be drunk, until no foreign substance appears in the matter thrown up—but do not let us administer an emetic; for, so long as nature continues her efforts to dislodge the offensive substance, it cannot be required, as she will certainly succeed if she be aided by warm water; and it can never be otherwise than injurious, after it has cast off the irritating material.

1422. When this complaint attacks very young children, nearly the same plan should be pursued—that is, an injection of the same materials must be given, of nearly the same strength, but of less bulk, and this repeated, when necessary—or, should the first not succeed in allaying the irritation of the stomach, it should be repeated in half an hour. A tea-spoonful of strong coffee, without sugar or milk, every fifteen minutes, should be given, especially to very young children; but we believe all ages would profit by it in larger doses. We have, in a number of instances, since we first tried it, seen it act like a charm.

1423. In the commencement of this disease, we have never seen the temporizing remedies, as the alkalies, the absorbents, or external irritants, of the smallest service: we, therefore, never employ them. At this time, also, we discard all strong-smelling substances from the room; and especially from the stomach within, or the belly without; as mint, spices, brandy, gin, &c.; as we are convinced they are extremely offensive to the stomach, through the medium of the olfactory nerves.

1424. If the stomach have not been tranquillized by the injection, or the strong coffee, we immediately commence with minute doses of calomel. We first prescribed the remedy in doses of half, a quarter, or an eighth of a grain in cholera, in the year 1795; and we were, by some of our medical friends, severely ridiculed, for the supposed insufficiency of the dose. But this did not deter us from the practice; for we have pursued it from that pe-

ried until the present moment, though we could then gain but few to be of our opinion: since, however, Mr. Ayre has written on the subject, it has got into general use. We never combine opium with the calomel, in the early stage of the disease; being convinced it is better to exhibit it alone. The following is the form and average dose we use:—

R.	Calom.	ppt. gr. iij.
	Sacch. Alb.	gr. vj.
		M. div. in. par. xij.

1425. One of these powders is thrown dry into the child's mouth, every hour, until the bowels are decidedly operated on by them: this may be known, by the stools being more copious, less frequent and of a dark green colour, with a tenacious slime of the same or nearly the same, tone of colour. When this change is observed, the powders are given much less frequently; say, once in two, three, or four hours, as the symptoms may have abated, or proved refractory. After the bowels have been well evacuated, and the child in pain, or pretty much exhausted, we order an injection in the evening, with laudanum, proportioned to the age of the child.

1426. Should the symptoms persevere, we renew the treatment of the previous day, until similar effects be produced; and the laudanum injection at night: pretty much after this plan do we treat the first or acute form of the disease. If much fever attend, with great gastric distress, we have found the most decided advantage from bleeding, or the application of leeches over the region of the stomach; or, if there be much cerebral determination, we bleed from the arm, or draw blood from the temples by leeches.

1427. Should irritation of stomach continue, and the legs and feet become cold, much good is frequently derived by blistering the legs, or from having them rubbed with mustard and warm vinegar, or Cayenne pepper and warm brandy, until the action of the skin be excited. But from what has been said it will appear, that our chief reliance is upon the use of the calomel. We are aware that many respectable practitioners are in the habit of giving larger doses of this article than we are: be it so—we are not at present, however, disposed to change a plan that has for so many years borne us out successfully in this truly fatal disease. Let every practitioner proportion his doses agreeably to

his own experience; the administration of this remedy is all we are solicitous about. If one practitioner have found this remedy to succeed best in larger doses, let him employ them; we are satisfied with its efficacy in more minute quantities. We all have the same object in view, namely, to quiet the irritation of stomach and bowels, and to make a decided impression on the hepatic circulation, to invigorate or calm its actions, and thus restore the lost equilibrium in the distribution of the blood, which is essential to the performance of its natural functions.

1428. Having thoroughly evacuated the *primæ viæ*, and re-established healthy secretions, we are to desist from purges: we should be content with keeping the bowels in a soluble state only; unless we have evidence of re-accumulations of bilious, and fouler contents, or of hepatic torpor and congestion, when the same course is to be renewed. But if irritation be excessive, and, as usual, productive of frequent and painful discharges, we may, with much advantage, administer anodyne injections, three or four times in the course of the twenty-four hours, after having applied a few leeches to the region of the stomach. These remedies will, in most cases, certainly calm the intestinal canal; and as soon as this happens, the acrid discharges, together with the other symptoms, very generally cease to be troublesome. Yet, it will be occasionally necessary, to administer a mild purgative to remove oppressive accumulations, when they manifestly exist: for this purpose, castor oil is best.

1429. In addition to what has already been advised, for the management of this disease, we should be attentive to the means calculated to make a direct impression on the skin. For this purpose, the occasional use of the warm bath is highly important. Every case of cholera, as formerly stated, is more or less marked by great inequality of temperature—so much so, that one portion of the body will be parching hot, while another is very cold. By immersing such a patient in warm water, we equalize temperature, and diffuse a glow over the entire surface, while other benefits are, at the same time, attained. The effects of the bath, however, are not lasting; and, hence, it is required to be repeated daily, or even oftener. It may be rendered more effectual, where there is much cutaneous insensibility, by adding to it salt, mustard or brandy—and, upon coming out, to employ frictions, &c.

1430. We have already glanced at the use of blisters. They are serviceable at any stage of the disease, if unequal temperature prevail; and may be applied over the stomach, abdomen, or to the extremities, according to the state of the case, and the more striking indications, that is, if the extremities be as warm as the abdomen, we may apply a blister over the region of the stomach; but if the legs be cold, blisters had best be applied to the calves of the legs, first irritating the surface by rubbing them with a little spirit of turpentine. In addition to their ordinary effects, they very usually promote perspiration. It is a fact not sufficiently known, that without vesication, in certain conditions of the skin, diaphoresis will not take place.

1431. This plan, however, proving unsuccessful, it must be intermitted; and, the bowels continuing highly irritated, with bloody evacuations, we may try the oleaginous mixture, consisting of castor oil, gum Arabic, and laudanum—or what, perhaps, is still better, melted butter, or a union of sugar of lead, ipecacuanha, and opium. The lead here is occasionally very efficacious.

1432. In the course of a few days, in some instances, and in others, a week or more, the disease passes into the nature of diarrhœa, which, however, is sometimes attended by a slight degree of tormina and tenesmus. It is also usual, at this time, to find the stomach greatly debilitated, with a loss of the power of digestion; and so irritable, as hardly to retain any description of nourishment. At this time also; the stools are apt to become very watery and green; manifesting the predominance of acid. The remedies proper, under such circumstances, consist chiefly of the cretaceous and alkaline preparations, variously combined.

1433. They may be prescribed as follows:—

R.	Cret. Prep. vel. Test. Ostreor.	ʒiss.
	Gum. Arab. }	
	Sacch. Alb. }	āā ʒj.
	Tinct. Theb.	gtt. x.
	Aq. Font.	ʒiij. M.
R.	Sal. Tart. vel. Carb. Sod.	gr. xxx.
	Gum. Arab. }	
	Sacch. Alb. }	āā ʒj.
	Tinct. Theb.	gtt. x.
	Aq. Font.	ʒiij. M.

A drop of the oil of cinnamon may be advantageously added sometimes to either form of the mixtures. Lime-water and milk may be, also, usefully employed.

1434. At this period of the disease, preparations of rhubarb are sometimes resorted to with advantage. The spiced or simple syrup of rhubarb, may be given, combined with small doses of laudanum. In the use of these preparations, the dose is to be small, and repeated at stated intervals, so as to attain rather the tonic, or astringent, than the purgative effect, of this medicine.

1435. As the disease advances, it loses most, or all of its acute or painful symptoms, and becomes a colliquative diarrhœa; and so profuse as to produce from ten to twenty stools in the twenty-four hours.

1436. The treatment of this case is similar to that of chronic diarrhœa; we shall only here point out some of the remedies suited to the cases of children. (See Chapter on Diarrhœa.)

1437. Combinations of chalk, with the tincture of kino, or with an infusion of galls and laudanum, are worthy of confidence. The columbo in infusion, has much reputation. An infusion of logwood has also been employed. The decoction of the pomegranate bark, or flowers, is said to be of great service. The dose of each of these preparations, is nearly the same—about a dessert-spoonful to children above a year old, and less for younger. A strong infusion of the dew, or blackberry root is said by many to be useful; it has never done much in our hands. By some practitioners, the chalybeates are not a little prescribed—the best of which, agreeably to Dr. Chapman, is the supersaturated sulphate of iron, in the following formula:—

R.	Sal. Martis.	gr. ij.	
	Acid. Sulph. dilute.	gtt. x.	
	Sacch. Alb.	ʒj.	
	Aq. Font.	ʒj.	M. The dose ʒj.

1438. Even here, however, calomel is serviceable, when there are marks of hepatic congestion, or want of bilious discharges, or the presence of vitiated humours. But the chalybeate must be laid aside, if it be proper to use the calomel; and the bitter infusion be given instead.

1439. Exactly under similar circumstances, and especially if the mucous tissue of the bowels be much disordered, as is mani-

fested by the loaded tongue and slimy stools, the spirit of turpentine has been found highly beneficial. With this we have several times succeeded, where all hope has been abandoned. The dose is from five to twenty drops three or four times a day, in sweetened cold water. Before we dismiss this part of our subject, it may be well to observe, the occasional use of laudanum, when there is pain, is absolutely necessary; a flannel roller around the abdomen, is sometimes productive of signal benefit.

1440. This brings us to the consideration of regimen. In the commencement of the disease, the diet should consist exclusively of breast milk; which is of such importance, that a nurse ought to be procured, where the child has been weaned. It will of itself, sometimes, cure the disease. Caution, however, is necessary, even here, as the child, from excessive thirst, may demand the breast too frequently, and thus overload its stomach; the child, therefore, must not be permitted to suck too much or too often. If thirst be importunate, cold gum Arabic water may be given in small quantities frequently, instead of the often nursing.* But if the child will not take the breast, let it be fed on diluted sweetened milk, or barley, or rice water and milk, or gum Arabic tea. These will serve also for drink. But balm, or marsh mallows tea, soda water, and burnt bread and water, may also be directed for this purpose. In the advanced stages the farinaceous articles may be employed—as very thin arrow-root, tapioca, sago, rice, or boiled flour. Extreme debility of the stomach and bowels existing, and no fever present, a little ham or salt fish may be allowed. Yet the only remedy which is sovereign, and nearly unfailing, is a change of air. As long as the child remains in the city, and exposed to the operation of the causes of the disease, we may palliate or suspend its career, but can hardly ever make a radical cure—relapse upon relapse takes place, till strength is finally extinguished.

1441. Great benefit is gained by a removal to the country, in every stage of the complaint. It is even said, by the late Dr. Rush, that he never lost but three patients, where this advantage was commanded; and it must be admitted, that there is nothing so effectual. As soon, almost, as the child gets into the country

* For the purpose here signified, an ounce of gum Arabic will be sufficient for a pint of water.

air, we may discover a change. Where we cannot have a country residence, entirely, it will be useful to ride it out daily, or twice a day. Crossing the river, we have very often found highly beneficial.

1442. To prevent a disease so difficult of management, and so destructive of life and happiness, we shall indicate those measures which common experience has found best.

1443. 1. Never permit a child to be weaned within the year, when practicable to prevent it. No food is so salutary as the natural milk. As respects this complaint, weaning always pre-disposes to its attacks.

1444. 2. Direct the wearing of flannel next to the skin, and worsted stockings. The great benefit of this system, is experienced by grown persons, prone to intestinal complaints, and we know its utility to be no less in children.

1445. 3. Duly regulate the diet—let an excess of any fruit be avoided, and absolutely abstain from unripe or unwholesome kinds. The proper food of a child is, substantially, milk, with farinaceous matter, such as arrow-root, rice, biscuit, &c. After a few months, provided it has teeth, it will be useful to accustom it to a little animal food. It strengthens the powers of digestion, and the general tone of the alimentary canal.

1446. 4. During dentition, let the gums be frequently examined, and if any appearance of swelling or inflammation exist in them, they must be lanced. Dentition, during hot weather, is but too apt to excite cholera; and if the complaint exist, it never fails to aggravate it. (See Chapter on Dentition.)

1447. 5. Let the child, when practicable, be removed to the country; but not too early in the season.

CHAPTER XXIX.

OF PERTUSSIS, OR WHOOPING COUGH.

1448. Whooping cough usually begins like a cold, with more or less fever, and catarrhal defluxions—these continue, in some instances, throughout every stage of the complaint; while, in

others, they cease in a few days. The onset of the disease, is, for the most part, abrupt, without any distinct febrile movement, and is sometimes early attended by the peculiar inspiration, which gives it its common name. At other times, a considerable period elapses before this takes place; and, in some cases, it does not happen. Cullen tells us, he has had instances of a disease "which, though evidently arising from the chin cough contagion, never put on any other form than that of common catarrh."

1449. The disease becoming confirmed, the paroxysm consists of a number of short expirations, closely following each other, so as to produce a sense of suffocation: to overcome this, a violent effort of coughing is made, which usually ends in vomiting, or a discharge of phlegm or mucus from the lungs. In many cases, when the paroxysm is over, there is complete relief in the interval; so much so, that the individual seems not at all affected, except, perhaps, temporarily, a little weakened.

1450. This complaint is not accompanied by a difficulty of breathing as a necessary attendant, unless in such as may have a chronic affection of the thoracic viscera. If it attend whooping cough in such as have no pectoral complaint ordinarily, it betrays, for the most part, some latent mischief in either the bronchial membrane or the substance of the lungs themselves—this may be either inflammation or engorgement.

1451. Dr. Watt says, that whooping cough is sometimes attended with great torpor of the bowels, requiring large and frequent doses of medicine before it can be overcome. We have never witnessed this condition; and when it does occur, it is, perhaps, only relative; the coats of the stomach and bowels being "varnished," as it were, with mucus; and thus preventing the operation of medicine, by not permitting contact, between the medicine and the intestinal membrane. Also, that the urinary secretion is influenced, and micturation produced.

1452. In the commencement, expectoration is sometimes very deficient; the cough is hard and dry; the paroxysms recur frequently, and are long continued. Congestion of the lungs now takes place; which produces, by the interruption of the circulation in these organs, a correspondent state of the head; and, as a consequence, a turgescence and suffusion of face, amounting sometimes even to lividness, which is occasionally relieved by

gushes of blood, from the mouth, nose, eyes, or ears. In this manner, the disease runs an indefinite course, from one month to three, or even twelve months; though the average is, perhaps, the second period. This, however, very much depends on the season of the year; it being always of longer duration in winter. The popular notion is, and which is not far from the fact, that it is six weeks in reaching its height, continues for some time with but little abatement, then declines, and goes off in six weeks more.

1453. Some writers, especially Webster, consider the whooping cough as consisting in some cerebral disorder; and adduce, as evidence, the existence of headach, redness of the eyes and cheeks, and the relief that a bleeding at the nose affords, together with the appearance of the brain and its appendages after death. Dr. Gregory, like Webster, speaks "of a *tensive* pain of the forehead; and, in severe cases, this is obviously an *urgent* symptom, and one which demands attention in reference to practice." We have paid considerable attention ever since we read Mr. Webster's paper on whooping cough to the symptoms which particularly mark this disease, but we have never satisfied ourselves of the existence of any *primary cerebral disorder*. We have occasionally had confessions from our patients, that they had more or less headach, especially after violent coughing; but there is surely nothing in this more than might be expected from such efforts of the chest as this disease demands. And of the "*tensive*" pain in the forehead just spoken of, we have never been certain that it existed even late in the disease. This may have arisen from our patients, at least nineteen out of twenty whom we have examined with this view, being too young to either describe it, or to make them sensible of our meaning; with the few whom we interrogated that could comprehend what we suppose Mr. Webster intended by the expression, it was certainly wanting. Nor is the relief experienced by a bleeding from the nose any proof of the existence of the disordered condition of the brain and its appendages; since this kind of bleeding very certainly removes pain from the head, when the mucous membrane of the frontal sinuses are inflamed in catarrh. Besides, the existence of the appearances after death, noticed by Mr. Webster, does not appear to be confirmed by Laennec. And Dr. Watts says that this disease is proved by dissection to be bronchitis.

Guibert considers whooping cough as "essentially nervous or spasmodic:" he says, "With several authors, I look upon the convulsive cough, as a nervous disease, produced by a spasmodic affection of the glottis and diaphragm. But this spasm is seldom uncombined or idiopathic; and that in the majority of cases it is coincident with some other affection of the organs of respiration, as bronchitis, pneumonia, pleurisy, and sometimes phthisis. In a word, the whooping cough is a disease essentially nervous or spasmodic, and which may exist alone, and without any evident cause, but is generally attended by a disease which has, for the most part, its seat in the respiratory organs, and which necessarily modifies the progress, duration and mode of treatment of the whooping cough so decidedly, as to induce the belief that it is the only existing cause. From this it would follow, that all the idiopathic diseases which may have cough as a prominent symptom, may also be attended by whooping, which will then appear to be nothing more than a peculiar modification of the ordinary cough. My opinion is founded, first, upon the diversity and contradictory theories of authors upon this subject, and which start with the assumption, that the disease is situated in this or that organ; 2dly, in this disease being complicated, for the most part, with some other disease; 3dly, from the uncertainty of any mode of treatment, and the similarity of result from opposite modes of treatment; and, 4thly, upon clinical observation, and the inspection of the bodies of those who have died of the disease," (pp. 145, 146.)

On this account of M. Guibert, we see nothing but an attempt at *new views*, without the slightest practical advantage; and the whole of his hypothesis upon this disease, is, in our opinion, contradicted by the fact, that, as a general rule, it never occurs but once in the same individual, which would not be the case were his opinion justly founded.

The same may be said of Dr. Alderson's pathology of this disease—he makes it consist in an inflammation in the air cells of the lungs; in which he says, "Mucus is secreted in less quantity than usual, a fibrinous exudation takes place, and adhesion of the parietes of the cells is the consequence; whilst the cellular membrane separating the individual lobules, retains its natural structure." (Medico-Chirur. Trans., published by the Medical Chirurgical Society of London, vol. XVI. part I.)

Now, the inflammation spoken of, no doubt, in most instances, really exists—but bronchitis, for it is nothing more nor less, simply considered, is not sufficient to account for the whole of the phenomena of the whooping cough, as we have this moment intimated of M. Guibert's views.

1454. With respect to the origin of pertussis, there is considerable doubt. It is supposed to depend on a specific contagion, which affects persons only once. To this, however, there may be exceptions. While it is pretty generally admitted, that the disease proceeds from contagion; there are writers, who maintain, that it occasionally, at least, prevails as an epidemic; and, hence, must originate in a more common source. Much discussion has lately taken place on this point; but the facts are not sufficiently numerous, nor well authenticated, to warrant any very positive conclusion.

1455. Yet, we confess, that we are inclined to believe that it depends on causes of a more general and pervading influence, than contagion.

1456. That it does, in some instances, arise from other causes than contagion, seems quite certain. Willis, who was the first to describe it accurately, declares it to be an epidemic, occurring most commonly in spring, and autumn. By Hoffman, it is said to have spread in Berlin to a great extent, in the same way. In the tenth volume of the Medical Repository of New York, Dr. Willey gives an account of the disease having suddenly broken out in Block Island, and where it prevailed widely, without the inhabitants of the place having had any intercourse with an infected source. It is a rule, with few or no exceptions, that, where a disease can be traced to atmospherical influence, it does not prove contagious. Nature, indeed, can hardly employ two such opposite causes to produce the same effect.*

* It is a well known fact, that many become affected, where every precaution is taken to avoid contagion; and that the disease is uniformly relieved, or even cured, by a removal beyond the limits of the supposed distempered atmosphere.

Agreeably to Desruelles, the following writers have described epidemic whooping cough:—

Traite de la Coqueluche, p. 100, &c. &c.

Pasquier speaks of an epidemic of this kind, that broke out in March, 1411. More than one hundred thousand in Paris alone, were attacked with it. This account is confirmed by Mezeray.

De Thou relates another epidemic that besieged Paris in 1510: this was called

1457. Believing that the complaint is generated by specific contagion, we have, perhaps, too much neglected to look for other causes of its production. Yet, on the whole, in the present state of our knowledge, it will be most prudent to proceed in practice, under the impression of its contagious nature.

1458. It may be inferred from the history of the disease, that the diagnosis is neither difficult nor obscure. But this is not exactly so; for in its commencement, it so much resembles the common catarrh, that it is almost always mistaken for it: especially in early spring, and late autumn: nor can it well be decided, which disease it may be, until the permanency and obstinacy of the affection declare it to be whooping cough.

1459. The remote cause of whooping cough may be received at the moment catarrh is about to make its appearance; and thus may be confounded with it; or it may be called into action by the catarrhal affection, and thus perpetuate the symptoms of this disease. Or it may, and we believe it often does, at the periods just named, assume all the forms of catarrh, and from which, in the commencement, it would be impossible to decide, whether the affection under consideration be whooping cough or catarrh: for whooping cough, at its onset in the spring and fall, is attended by as much febrile action as catarrh; and it is not until this inflammatory stage is about to pass away, that the cough assumes the paroxysmal form, and declares the disease to be whooping cough. When the spring is pretty far advanced, and during the hot weather of summer, whooping cough is rarely confounded with catarrh; for at these periods, there will be less fever, and the disease will more quickly betray its peculiar character. But, fortunately, no evil can arise from their being confounded; for at this period their treatment must be precisely the same. It also resembles the initiatory symptoms of measles; for in whooping cough there is sneezing, watery eyes, swelling of

whooping cough: the symptoms were not related by him, though mentioned by Sennertus.

Riverius mentions one that spread over almost the whole of Europe in 1557.

Baillou gives an account of one in 1578.

Geller describes one that took place in 1757, in the duchy of Mechlenburg.

Aaskow, one that happened at Copenhagen, 1773.

Arand, one that occurred at Mayence in 1769, &c. &c.

It thus appears that this disease has occasionally appeared in an epidemic form from 1411 to 1815. The last, that is, of 1815, is said to have occurred at Milan.

the eyelids, and an unusual fulness of the face. But the doubts to which of the diseases these symptoms belong, is, for the most part, soon cleared up, by the eruption taking place in measles on the third or fourth day after the commencement of the catarrhal affection. It is, however, said, that instances of measles have occurred without any eruption having taken place, but this we have never seen.

1460. This disease is generally most severe with infants, as they cannot expectorate with the same freedom as older children, and are thus debarred this source of relief. Where it attacks with much fever and catarrh, it is also unfavourable; and with pneumonia, or peripneumonia notha, still more so. Consumptive subjects rarely or never recover. The favourable circumstances are—absence of fever, and oppression; free expectoration, and facility of vomiting. The disease terminates, sometimes, by the gradual wasting of strength, or runs into chronic affections, as consumption, asthma, hydrothorax, and hydrocephalus, or, suddenly, by apoplexy, or suffocation, from spasm of the glottis.

1461. It is obvious, that the irritation of the remote cause, wherever it may be primarily seated, induces an inflammation of the mucous membranes of different parts of the organs of respiration, occasioning an increased secretion of fluid; which accumulating, acts as an extraneous substance, and brings on the cough for its expulsion. When this natural effort succeeds, there is for a time a complete interruption of the coughing: but on its being reproduced, we have a repetition of the paroxysm. By too long a continuance of this irritation, disorganization takes place in the lungs, &c.; and the system at large, participating in the morbid affection, a gradual exhaustion of strength, and death takes place; or the air-cells being choked up, or the glottis closed by spasm, or by collections of mucus, or lymph, the patient dies suddenly from suffocation: or, possibly, in some instances, as is represented, the brain may become so affected as to constitute a new and more complicated case, terminating life by coma, convulsions, &c. At this period, an inflammatory state of the system undoubtedly exists; it, however, exhibits a very peculiar character, owing, perhaps, to the nature of the cause by which it is excited; for it is, unquestionably, far less obedient to the usual remedies than ordinary inflammation; and, in many re-

spects, proves illustrative of the modification which this condition receives, from the agent producing it.

1462. Dr. Watt regards this disease as essentially an inflammation of the mucous membrane of the bronchia; and that when it terminates fatally, it is generally by the production of severe bronchitis. Laennec says, that whooping cough holds a middle place between the mucous catarrh and pituitous catarrh, as far as regards the nature of the expectoration and the bronchial congestion; but that it possesses some characters peculiar to itself. Such rarely occurs twice in the same person; the cough taking place by fits: "Each fit," he says, "is composed of a quick succession of sonorous coughs, with scarcely any perceptible inspiration between; except that, from time to time, the expirations of coughing are suddenly interrupted by a very deep, seemingly convulsive, and noisy inspiration, accompanied by a lengthened hissing, which constitutes the pathognomonic sign of this variety of catarrh." "The stethoscope exploration of the chest in the intervals of the fits, supplies only the usual results of catarrh—namely, a feebler respiration than natural, or the complete absence of this in certain points, which, however, sound well—puerile respiration in other parts, and, occasionally, a slight sonorous or sibilous mucous rattle."

1463. Desruelles makes it consist of an inflammation of the bronchia, complicated with cephalic irritation. But that the "*inflammation des bronches est toujours primitive, et l'irritation du cerveau consécutive*," p. 77. We can readily imagine that the brain, or its appendages, may indirectly become implicated with whooping cough, since the very efforts of the thorax, during the paroxysms, is well calculated to force an unusual quantity of blood into the brain—we, therefore, need not be surprised, that dissections have revealed water in its ventricles, though we cannot admit, that the inflammation which terminated by the effusion of water, was the cause of the affection of the lungs.* Des-

* Dr. Palmer (Illustrations of Medicine, p. 183) has adopted the following pathology. He says, "During the violent paroxysms of the cough, the blood is propelled in undue quantity and with increased impetus of the brain; and the irritated and loaded organ reacts with augmented violence on the local malady. Numerous facts are illustrated by this view in the history of chin cough. Of these, the most striking are,—the absence of the convulsive character in the other inflammations of the air passages not complicated with cerebral irritation;—the exist-

ruelles considers whooping cough as essentially inflammatory, under all its modifications and appearances. He says, “a quelques causes que puissent être attribuées les modifications que présente la caqueluche; quelles que soient l’activité ou la lenteur de sa marche la violence ou la faiblesse de ses symptômes, la promptitude ou le retard de sa guérison, son état de simplicité ou de complication, son issue heureuse ou funeste, cette affection offre toujours les caractères d’une maladie inflammatoire dont les différens degrés sont les principales causes des formes diverses qu’elle revêt,” p. 217.

1464. Notwithstanding a more correct light has been shed on the pathology of whooping cough, little new is proposed in the management of it.

1465. As the whole of the phenomena at the commencement of this disease, declare it to be catarrhal; and as, in most instances, in the cold part of our seasons, it is attended with fever, and marks of local irritation and inflammation, there is the most decided necessity for treating this complaint by evacuants; as blood-letting, laxatives, and emetics, and these to be repeated according to the exigency of the case. These should be persevered in until they produce direct evidence that the inflammatory stage of the disease is abated, or subdued; or, in a word, let the disease, in the first instance, be considered nothing more than a violent catarrh, and be treated accordingly.

ence of the cerebral symptoms invariably observed in even in the mildest form of chin cough;—the frequency of nasal hemorrhage, and the marked relief of the bronchial affection resulting from it;—the notorious tendency of the brain to active disease in whooping cough; *from which some writers have been erroneously led to infer that the latter is simply a cerebral affection*;—and lastly, the maintenance of the convulsive character long after every trace of the original inflammation of the respiratory membrane has disappeared;† and the final removal of the disease, at that period by spinal irritants, powerful moral impressions, or other agents which can exert no direct influence upon the bronchial membrane, or any other organs, except the spinal marrow and the brain.”

† This clearly explains one of the sources from which error has arisen in investigations of the morbid anatomy of chin cough. A child is destroyed by an affection of the brain, connected with the disease in its later stages; and, consequently, after every visible trace of the bronchial inflammation has disappeared. On dissection, the bronchial membrane is found in a natural condition; and hence, an apparently correct, although erroneous inference may be drawn, that a morbid state of this membrane constitutes no essential character of whooping cough.”

1466. We are persuaded, that this disease oftentimes becomes inveterate, and sometimes dangerous, from prescriptions being based upon a mistaken pathology. Thus, both Burton* and Millar† reject blood-letting altogether, though Millar sometimes ventured upon the application of leeches. Lieutaud‡ never employed it but in extreme cases; that is, when the fever was very violent and the respiration difficult, &c. We would, therefore, wish the reader to keep in mind, the opinions of Laennec, Desruelles, Watt, and others, that in whooping, the bronchia, or other portions of the lungs are sure to be in a state of inflammation, especially in its commencement; and if proper depletion be neglected, a second stage is formed of the disease, and we then find a disposition, to either metastasis to the brain, or find that it participates severely with the original complaint—hence, convulsions, inflammation of the brain, or hydrocephalus are found to supervene.

1467. Bleeding is demanded, in many instances, independently of other circumstances, by the interrupted circulation of the lungs; and affords, almost always, the most decided relief.§ And this must be repeated as the necessity for it may continue, or, as this necessity may subsequently return in the progress of the case. Even in Europe, where the lancet, comparatively, is so sparingly employed, this practice is commended, and generally pursued; but in this country, its employment, for the most part, is indispensable.

1468. This was the practice of Willis, who was the first to give a regular account of this disease;|| he chiefly relied, for its cure, upon vomiting, purging, and blistering. This appears, too, to have been the general practice of the age, and particularly of Sydenham; and we have, among many inferior names, those of Astruc, Huxham, Hoffman, Hillary, Home, Lettsom, &c., in favour of this course of treatment.

1469. Evacuations of the alimentary canal must also be brought in aid of bleeding; and these may be made by eme-

* Appendix to Treatise on the Non Naturales.

† Observations on the Asthma and Whooping Cough.

‡ Med. Prat.

§ By bleeding, we wish to be understood, taking blood from the general system by means of the lancet.

|| This was in 1664.

tics, or laxatives; of the latter, the best is castor oil, after the bowels have once been opened by calomel. The former are chiefly applicable to children; and, where the attack is violent, and the oppression great, they may be repeated, provided the accumulation of phlegm is great and threatening. To keep up the impression on the stomach, small doses of the syrup of squills, or ipecacuanha, should be given in the intervals. Or, what has answered all these intentions with the most decided efficacy, is Coxe's hive syrup, given in proper doses.

1470. We always have recourse to this medicine immediately after bleeding, (if this have been necessary) and after having purged with calomel, hive syrup must be given in such doses as shall freely promote expectoration; or, should there be oppression, or evidence of great accumulation of phlegm in the windpipe and lungs, in such quantity, as shall freely puke. We, for the first purpose, order doses suitable to the age of the child, every hour or two, as it may show its effects. For a child of three or four months old, we would order eight drops every hour or two, and a proportionally larger quantity as the age advances; and, for the second view, we would give these quantities every fifteen minutes, until an emetic operation be produced. Let it be, however, remembered, that children of the same age will bear very different quantities of this medicine, as well as of every other; therefore, the doses must be constantly regulated by the effects. After this medicine has operated as an emetic, it must be given, as before directed, as an expectorant.* But should bleeding not have been necessary, the case will rarely require more than demulcent drinks, and a low diet.

1471. The state of the expectoration is a matter of consequence, and should always be attended to; for from it much may

* The following, is the recipe for making the compound syrup of squills, of Coxe's hive syrup. Take of

Seneca snake-root, bruised	}	each half a pound.
Squills, dried and bruised		
Water - - - - -		eight pounds.

Boil together, over a slow fire, till the water is half consumed; strain off the liquor, and then add of strained honey four pints.

Boil the honey and strained liquor to six pounds, or to the consistence of a syrup; and, to every pound of the syrup, add sixteen grains of tartar emetic; that is, one grain to every ounce.

be learnt. After the disease, in favourable cases, has arrived at its height, or is upon the decline, the expectoration becomes more profuse, and the sputa lose their mucous character, by assuming a more purulent appearance. But if this take place suddenly, or in the early part of the disease, it is, for the most part, an unfavourable sign. Nor is blood mixed with the expectorated matter, a good token, generally speaking.

1472. The most abstemious diet should be observed during the whole of the catarrhal stage of this complaint, which is from three to six weeks, according to the season. Children at the breast should receive nothing but the mother's milk; those who are weaned should be confined strictly to a milk and vegetable diet. All animal food, or broths, must most scrupulously be avoided. Rennet whey is preferable to whole milk. The drinks should be barley water, flax-seed tea, gum Arabic water, bran tea, toast water, or molasses and water.

1473. The milder laxatives, though recommended by many, do not answer as well as calomel for the first purging; for, independently of its purgative effects, this medicine would seem to exercise some other power. Certain it is, that active evacuations by calomel, in the commencement of the disease, have, in a greater or less degree, the effect of breaking down the force of the catarrhal symptoms, and to abridge the career of the disease. We, therefore, almost always commence the treatment with a mercurial purge; and repeat this for the first two or three days, if the condition of the bowels require it. Whatever opinion may be adopted of its mode of action, we are certain of its utility; and as there can be no dispute as to the propriety of having the bowels well opened in the beginning of the disease, calomel seems to be the best suited to this purpose.

1474. During the general treatment pointed out, we are not wholly to lose sight of some local remedies in this disease. Congestion and inflammation of the lungs are apt to take place; for the relief of which, blisters are found decidedly advantageous after proper evacuations; or, should it be necessary to draw more blood, let it be done by leeches or cups, from between the shoulders. We are decidedly of opinion, that blood cannot be taken by leeches or cups, with any thing like the same advantage from any other part, where there is a threatened congestion of the lungs; and it sometimes becomes important to follow this up, by a blister to the same part.

1475. When there is a strong determination to the head, the same remedies are required, both general and local. Leeches to the temples we have found of singular advantage, where much pain in the head was experienced after each spell of coughing; indeed, we now never neglect this last symptom, as we are convinced it was the prelude to fatal issue in two or three cases we have seen; by extravasations within the brain—and who has not witnessed the advantage, or at least the immediate relief, from an accidental bleeding at the nose?

1476. Though we admit of determination of blood to the head in this disease, and recommend, as just stated, local depletion for its relief, we are by no means of opinion, that either this determination, or an inflammation of the brain, or its appendages, have the least agency in the production, or even the perpetuation of the cough with which either may be associated. Yet the supervention of inflammation, or even a congestive state of the brain, will very much increase the danger of the patient—therefore, these conditions require the active means just recommended for their relief. Nature sometimes furnishes the means of relief herself, by instituting a bleeding from the nose—this, when sufficiently extensive, affords more relief than either cupping or leeching, and should, therefore, always be encouraged to an extent every way compatible with the exigency of the symptoms, and the strength of the patient, if this be practicable.

1477. But let it be remembered, that the bleeding from the nose, however instrumental and speedy it may be in abating the violence of the marks of determination to the head, or of congestion in the brain, only proves the immediate condition of these parts, and not an original agency, in the production of whooping cough.

1478. In the use of the remedies recommended above, we would wish it to be understood, that we do not always prescribe bleeding, or loss of blood in any other way in every case of whooping cough, as it very often presents itself without the symptoms which would justify this, or, perhaps, any other remedy, except occasionally the use of the syrup, as just directed, to secure a free expectoration: or the administration of a few grains of calomel; or, what is better, after the first few days of the disease, the occasional use of castor oil, if the bowels be confined.

1479. If due regard have been paid to the treatment of the in-

flammatory or catarrhal stage of whooping cough; or if the remedies for subduing this state have been successful; a second period of this disease will arrive, in which other remedies may be useful. But it should be carefully ascertained before the character of the remedies are changed, that every vestige of inflammatory action shall have ceased; therefore, the pulse must be carefully examined, and it must be found sufficiently subdued, before we commence with the antispasmodic and tonic remedies.

1480. Desruelles finds much fault with these directions: he says, “comment se fait-il que le Docteur Dewees, qui montre tant de confiance dans le régime, qui le prescrit avec tant de réserve et de sagesse, ait cru nécessaire de donner l’émétique, d’entretenir les nausées par des petites doses d’ipecacuanha, de purger souvent avec calomélas, et de s’abandonner à l’action incertaine et souvent nuisible des narcotiques, des antispasmodiques, et même des toniques? Il préconise la saignée et la diète, et il administre des medicamens stimulans: n’est-ce pas détruire d’une main se que l’on a fait de l’autre? Par quelle étrange association d’idées peut-on faire concourir au même resultat des moyens si opposés, si contradictoires?” (p. 242.)

1481. In answer to the above questions, it will be only necessary to say that we differ a little in the progressive pathology of whooping cough, and on this circumstance does the difference of our treatment arise. Desruelles considers the bronchia, at least, if not the brain or its appendages, to be in a state of phlogosis during the whole continuance of the cough; while we are of opinion that the stage of inflammation passes away, and that if the cough continue after the pulse declares the absence of febrile action, that it arises from some impression upon the nervous system, or that it may then become the cough of habit. With this belief in view, we prescribe a rigid diet, order bleeding, either general or topical, or both, purging, &c.; but, after the necessity for this discipline has ceased, we think we have always found it useful to give either antispasmodics, or tonics.

1482. We do not order, as will be perceived, these different plans at one and the same time; for we have just insisted, that “before the character of the remedies are changed, we should carefully ascertain that every vestige of inflammatory action has ceased.” There is certainly no inconsistency in this practice—nay, it is very often essential to the cure of many affections, as

fevers, and especially intermittents, that the system be reduced before tonics are given. We have just stated, that Desruelles looks upon the whooping cough to be essentially an inflammatory disease, under all its modifications, and through the whole of its career, and that it consequently requires an antiphlogistic treatment from its commencement to its final departure; but as we have never had any reason to be of this opinion ourselves, we have not adopted the notions of this author upon this point. The difference of our views of the character of the disease during its progress, will readily account for the difference of our plans of treatment. We might retort his queries with equal propriety to him when he insists upon one uniform mode of practice through the whole course of the disease; for to us it appears as inconsistent as our plan does to him.

1483. In justice, however, to him, we admit that we have seen a number of cases of whooping cough subdued, and that speedily, in some instances, by a perseverance in the antiphlogistic plan of treatment; but, on the other hand, in justice to ourselves, we must say that we have seen very many more, that required the treatment that we have laid down.

1484. We believe it has been chiefly owing to want of attention to the state of the pulse, that this disease has not yielded more generally to the influence of remedies—for it has been prescribed for more empirically, than almost any other complaint in the long catalogue of human diseases. If the first stage have been neglected, or improperly treated, the disease will pursue its course in spite of all opposition; and the patient may be felicitated when it takes its departure, however protracted this may be, and leaves not behind, more serious evils than were experienced by its presence.

1485. We have no confidence in the opinion, that this disease will have a determined course; and that we can only relieve the pressure or inconvenience of the immediate symptoms, though it is urged by Sydenham himself. Nor should we inculcate this belief, until it be a well ascertained fact, as it would but too certainly foster supineness and indifference in the treatment of this formidable disease. Too much has already been taken for granted upon this subject; and, because we are not yet in possession of proper counter agents to this complaint, it certainly does not prove it to be indomitable. The intermittent

fever, and lues venera, were once thought to be equally, if not more unmanageable, than whooping cough; but the discovery of the bark, and the use of mercury, have rendered them comparatively harmless diseases; the proper or appropriate remedy for whooping cough may, therefore, be yet discovered.

1486. If the opinion prevail, that whooping cough will have a definite duration, all exertion to abridge its career will be paralyzed, and the poor suffering infants and children, will be deprived of even the moderate aid it is now in our power to give. As regards ourselves, we are decidedly of opinion, that its duration may be as certainly shortened, as the march of fever; nor do we say this upon slight or inadequate grounds, if our observations have not deceived us. We have known this disease to be made run its course in eight members of the same family, and at the same time, in less than six weeks; and in many other instances, the period has been abridged with equal success. But what has entirely confirmed us in the persuasion, that the period of this disease can be shortened, nay, even stopped short in some instances, was the success we once witnessed from the exhibition of the tincture of artificial musk, in a family of five children, who were all labouring under confirmed whooping cough.

1487. When we prescribed this remedy, the disease had been of about two weeks' standing, all the children were attacked within the period of a week: the catarrhal symptoms were very mild; it was summer, and they readily yielded to a moderate antiphlogistic plan. All inflammatory action was completely subdued, and all the children were put upon the use of the artificial musk at the same time. One, the youngest, (eleven months old,) ceased to cough altogether in less than a week, and neither of the others continued as long as a fortnight.

1488. We, however, confess we have not seen so striking an instance of the influence of this article since; though we are every way convinced, it is a valuable remedy in this disease, and one that we have long been in the habit of using.

1489. Another disadvantage arising from the belief that this disease cannot be shortened, is the neglect of early measures to subdue, or moderate the inflammatory action of the system in its commencement: in consequence of this, cerebral, and pulmonic congestions form, of which the patient, perhaps, speedily dies,

or such disorganization takes place, as to render him miserable for life. This doctrine is not understood by people in general—for when it is declared we cannot abridge the period of the disease, it is always understood to mean, we can do no good in whooping cough; of course, the physician is but too rarely employed in this complaint. Yet we are certain, there are few diseases, in which more relief is experienced than well treated whooping cough in the commencement: of this opinion also was the experienced Dr. Underwood, who declares, “There is no complaint of children, with which I am acquainted, in which medicine is at times more evidently serviceable, than in bad whooping cough.” Then, why should poor children be abandoned, in this formidable complaint, for an ill-sustained hypothesis, or popular belief?

1490. Narcotics, and antispasmodics, are also directed at this period of the disease: among these, opium claims our first notice. After evacuations have been duly made, and there is a proper abatement of fever, or other marks of irritation, its use as a palliative of the more troublesome symptoms, is sanctioned by the experience of almost every body. The pleasantest, and, we believe, the best form for its exhibition, is in the brown mixture, in suitable doses at night.* Dr. Edwin P. Atlee recommends, with much confidence, the Prussic acid. The following is his formula:—

R. Acid Hydrocyanic, gut. iv.
Syr. Simp. ℥ij. M.

A tea-spoonful, morning and evening, for the first day—three times a day after.—*American Journ. of Med. Sciences, for May, 1832.*

* The following is the formula for the brown mixture; so called from its colour:—

R. Elix. Paregor.	℥j.	Take Paregoric Elixir	1 ounce.
Vin. Antimon.	℥ss.	Antimonial Wine	$\frac{1}{2}$ ounce.
Suc. Glycrrh.	℥ij.	Liquorice Ball	3 drams.
Pulv. G. Arab.	℥ij.	Gum Arabic	2 drams.
Aq. Fervent.	℥vj. M. ft. sol.	Hot Water	6 ounces.
			Mix.

Of this, a child from four months to six, may take a small tea-spoonful every two or three hours during the night, should the cough be troublesome. One from six months to a year, a large tea-spoonful and repeat, if necessary—one, from one to two years, a dessert-spoonful, and repeat; one from two to four, a table-spoonful, and so on, as the age increases.

And Dr. Bland, gives the sulphuret of potash in this disease. He advises it in doses of ten grains, morning and evening, in a little honey.—*ib.*

1491. During the prevalence of the pathology, which ascribed the disease to spasm, antispasmodics were the chief remedies. Of this class the whole were tried in succession, and particularly the castor, artificial musk, and asafoetida. Of the powers of the former, we are entirely ignorant, having never prescribed it. Cullen, however, tells us, that it is of no value.

1492. The second or artificial musk, has been long in use in spasmodic affections; and its powers are, in some degree, ascertained. But it is only within a few years, that it has been employed for the cure of pertussis; and we have already said, we have found it oftentimes a valuable remedy.

1493. It is also highly estimated by Underwood; and especially where the spasms are violent; it is given in the dose of five or six drops on sugar, or highly sweetened milk.

1494. Of the antispasmodics, asafoetida has always borne a high character; but our own experience is, by no means, calculated to advance the reputation of its powers in the disease in question; though we have found it occasionally useful, but never decidedly efficacious.

1495. We are next to consider the proper plan, after the cause of the disease, whatever it may be, has worn itself out, or is dismissed, and when the cough is kept up by the force of habit only; to interrupt the trains of morbid associations, all the tonics have been directed, and especially such as are supposed to have the effect of subduing paroxysmal tendencies. The Peruvian bark was, of course, placed at the head of this class, and is much celebrated. Cullen bestows on it unqualified praise, and considers it by far the most certain means; and even says, when given in sufficient quantity, he has seldom seen it fail of speedily putting an end to the disease. It is reasonable to suppose, that the bark might be useful; though it must be confessed that we have not witnessed such striking results from it; and, on account of the difficulty of getting children to take it with regularity, it is rarely prescribed in this city.

1496. This objection, however, does not apply to the sulphate of quinine; and it deserves a fairer trial than we suspect it has received. We have employed it in but one case; but this was one of the most forlorn kind—it produced almost resuscitation

1497. Mr. Sutcliff combined the bark with cantharides, and administered it with great success, he says, in whooping cough. The following is his formula:—

R. Tinct. Cort. Peruv.	$\frac{3}{4}$ vj.	Take of the Tinct. of bark	6 ounces.
Elix. Paregor.	$\frac{3}{4}$ ss.	Paregoric Elixir	$\frac{1}{2}$ ounce.
Tinct. Canthar.	$\frac{3}{4}$ j. M.	Tinct. of Canthar.	1 dram.
		Mix.	

Of this mixture small doses were given three or four times a day, gradually increasing until a slight strangury was excited; and then the dose was diminished, or taken at longer intervals. The strangury would generally take place about the third day; and the whooping cough seldom continued above six days from the first exhibition of the medicine. It, however, succeeded sometimes without exciting any strangury, though it generally produced its salutary effects sooner, when that circumstance came on, whether the bark was joined by the cantharides or not.

1498. Dr. Lettsom says, that “during twenty years this ingenious practitioner has almost constantly continued to use this medicine with the most flattering success.” Dr. Lettsom being desirous to know whether Mr. Sutcliff’s more mature experience led him to place the same confidence in this remedy, wrote certain queries to him respecting chin cough.

1499. Mr. S. replied to these several queries, and concluded by remarking, “I never yet saw an unsuccessful event after using the composition of bark, cantharides, &c., having never lost a patient in the whooping cough.” Dr. L. declares that similar success attended his own trials of this medicine. Watt, p. 282.

1500. But we have never employed any remedy, of equal efficacy with the garlic in substance, to relieve the cough of habit, after whooping cough. We have very often used it; and we have rarely seen it fail. The objections arising from its smell, are, however, very strong in the minds of some; so much so, that they cannot be prevailed upon to use it. But children of six or seven years of age, or even older, can very often be prevailed upon to eat it, and become after a while very much attached to it. A child of six or seven, may begin by taking a third of a common-sized clove, morning, noon, and evening; gradually increasing the dose, as the system becomes accustomed to its action. One, of ten, may take half a clove three times a day; increasing it as may be necessary; and so on for greater ages.

1501. Desruelles again condemns us for the employment of the garlic, both externally and internally. Indeed, he goes so far as to say, we have "a blind confidence in this substance." This affects us not; and so long as we continue to experience benefit from it, we shall persevere in recommending it, under the restrictions suggested above; namely, in the absence of all febrile excitement, and where the cough appears to be perpetuated by habit. The following case is highly deserving of attention: Miss M. W., aged twelve years, had the whooping cough in great severity, notwithstanding she was subjected to very active treatment in the early or inflammatory stage of the disease. It began in March, and the cough continued with great violence until July, at which time we were requested to prescribe for her. At our first visit, we had an opportunity of witnessing two fits of coughing; both of which spells exceeded in severity any thing we had ever seen. She was literally black in the face, and was threatened with immediate suffocation. These paroxysms were repeated frequently, especially during the day; they left her weak and exhausted; she lost flesh daily, and was so debilitated, as scarcely to be able to walk. She was ordered to eat a small clove of garlic three times a day; in forty-eight hours these paroxysms left her entirely; a slight cough remained for a few days, and then ceased altogether. We cannot but believe it was the garlic which afforded such speedy and happy relief; particularly as it has frequently proved as certainly, if not as extensively, serviceable in other cases of whooping cough.

1502. Exactly on the same principle, the arsenical solution is employed; and we have the strong testimony of Simmons and Ferriar in support of it. Each of these writers goes so far as to declare, that it is the only medicine deserving of much confidence. On this point, we can say nothing from our own experience; as we do not deem the few trials we have given this medicine entitled to much weight, our impressions of its efficacy are not strong.

1503. We have said nothing of the utility of topical remedies, in the acute stage of the disease; for they can rarely be useful: but in the one now under consideration, external applications may be advantageously resorted to; such as liniments of an irritating nature, as the volatile, or the camphorated; the spirit of turpentine, mixed with olive oil; or the juice of garlic, rubbed along the vertebral column. But, above all, we think we have observed

more advantage to result from the use of the tartar emetic ointment,* than from any other external application—this should be applied high up between the shoulders.

1504. It is well understood, how much the action of the lungs is dependent on a nervous influence from the spinal marrow; and it is probably on this principle, the efficacy of such embrocations is to be explained. The muscles of the chest, diaphragm, and scapulæ, receive portions of the cervical, and dorsal nerves; the accessory nerves of Willis, form a part of the par vagum, and assist in giving rise to the cardiac and pulmonalic plexus; hence, the propriety of applications to the spine; and, hence, the popular opinion of the utility of a Burgundy pitch plaster between the shoulders, is accounted for, from anatomical arrangement.

1505. Of the efficacy of a change of residence, more particularly to the country, and even of a frequent exposure to fresh air, every one is so fully persuaded, that the remedy is abused, by its general and indiscriminate adoption. It is by no means uncommon to see children exposed, in the coldest and most inclement seasons; and this, sometimes, by the orders of the attending physician. Nothing can be more pernicious, and ill-judged.

1506. In the inflammatory catarrh, we guard against cold, by keeping the patient in a room duly warmed; the same should be observed, in the first stage of whooping cough. The lungs, in this case, are either inflamed, or peculiarly susceptible of inflammation—so that the slightest exposure brings on, renews, or violently exasperates the attack. Catarrh, or active peripneumony, superinduced on pertussis, constitutes a most formidable case, and most frequently is the way in which the disease proves obstinate, or fatal. But, the inflammatory stage having passed, and the weather mild, much advantage may be derived from gentle exercise in the open air—this may be by walking, or riding in a carriage. But completely to eradicate the disease, the child should be removed into the country, provided the season of the year will justify this change.

* The following formula, we are in the habit of using for children:—

R. Tartar. Antimon.	℥iss.
Ol. Lavend. vel. Ess. Lem.	gtt. xv.
Cerate Simp.	℥j. M.

With this the part indicated must be rubbed three times a day, until it shows a number of small pimples upon it—dress with common cerate.

CHAPTER XXX.

OF CYNANCHE TONSILLARIS.

1507. This disease comes on with huskiness, and next with pain and inflammation of the throat, attended by some difficulty of deglutition, and sometimes with fever. In a short time, these are increased; and from the swelling of one, or both tonsils, there is a great inability to swallow. If the throat be examined at this time, we shall find the uvula, the pharynx, and the neighbouring parts, extremely red, and excessively tender.

1508. It, however, in some instances, and especially where the individual has had many preceding attacks, shows itself as a mere local affection, without fever, or any general constitutional disturbance.

1509. In this form of the disease, we have phlegmonous inflammation, which terminates, usually, either by resolution, or suppuration, and sometimes by induration of the glands. But, in other cases, it puts on the appearance of erysipelas; and here, instead of red vivid inflammation, with much swelling, the aspect is dark or purple; with superficial vesicles, or ulcers of a white or gray colour, resembling ordinary aphthæ.

1510. Commonly, no species of this disease is dangerous, whatever may be the degree of the immediate suffering; and only becomes so, when the inflammation extends to a more important structure, as the larynx.

1511. The symptoms, however, sometimes run very high, and then great suffering is endured. For the tonsils become so enlarged and engorged, that they nearly fill up the posterior fauces. Deglutition is now extremely difficult, and sometimes altogether impossible, without a repetition of the greatest and most painful efforts. Under such circumstances, it is not unusual for cough to be excited, and drive whatever is attempted to be swallowed, through the nostrils. The faucial extremities of the Eustachian tubes are very apt to be involved in this inflammation; when this is the case, each attempt to swallow is followed by an acute darting pain through the course of the tubes, which seems to terminate in the external ear.

1512. One of the most troublesome symptoms against which the patient has to contend, is the free secretion of a very tenacious mucus: this quickly accumulates in sufficient quantity to force the patient to swallow it; on which attempt, the pain becomes so excessive as to produce a convulsive action of almost every muscle in the body. This secretion is particularly troublesome when the patient attempts to sleep—so much so, indeed, sometimes as almost to preclude the possibility. To obviate this as much as possible, the patient should make his mouth so depending, that it may flow out before it accumulates in such quantity as will oblige him to swallow. The whole of the muscles of the fauces and tongue partake so much of the inflammation that it is impossible sometimes to protrude it; and the effort is always attended with pain. The tongue is quickly incrustated with a thick, very white coat.

1513. The fever which accompanies the cynanche tonsillaris is sometimes very high; at others, very much less than we should suppose would attend an inflammation of such extent and apparent violence. With those who are liable to attacks of sore throat, the fever for the most part is moderate—indeed, in some instances it seems to decline in proportion to the frequency of the occurrence, as if the system had lost some portion of its sympathizing powers. We, however, know of but few diseases which leave so much debility in the same time behind it. This may, perhaps, in part, be accounted for, from the entire impossibility, sometimes, of taking down nourishment.

1514. This disease is occasionally very obstinate; the inflammation not advancing to suppuration, nor receding by resolution. This is especially the case with those who may have cynanche supervene upon enlarged tonsils; or in those who have the lymphatic temperament strongly marked.

1515. Cynanche tonsillaris is almost exclusively produced by exposure to cold. There are many persons peculiarly liable to it; and a predisposition seems to be especially given, by former attacks; hence, caution is required, in avoiding the exciting cause.

1516. The practice of washing the throat every morning with cold water, is said to be an excellent preventive, and we know that much advantage has been derived from gargling the throat

every morning and evening with a solution of alum, for the same purpose.

1517. The treatment of the disease divides itself into that which is proper in its forming state; and into that, at the subsequent stages.

1518. If we are called very early, and before diseased action be completely established, we may frequently check the attack, by a stimulating gargle—such as an infusion of Cayenne pepper;* and by rubefacients, as the spirit of turpentine, mustard, and vinegar, applied to the external surface of the throat, until the skin becomes inflamed; or even by warmth, when the attack is very recent and mild, as a piece of flannel, or a worsted stocking, tied around the neck. But should these fail, we must change the practice, and endeavour to reduce the inflammation by evacuations. An emetic is here exceedingly efficacious, generally resolving the swelling, and suppressing the fever, if such exist: this should be succeeded by a mercurial purge, to be worked off, and the bowels kept open, by the saline laxatives.

1519. If necessary, we must next resort to blood-letting; and especially, leeching the throat; but the state of the pulse must always govern the use of these remedies. In many cases, it is not at all demanded; particularly general bleeding, as it is rarely productive of as much utility as might be expected. Yet, where there is great vascular action, it must be employed and repeated according to the emergency. The topical bleeding, by cups, or leeches, is generally more effectual; and especially, where the affection is local, or the system is somewhat reduced. In violent cases, or even in cases threatening to be violent, blisters should be employed; and this as early after the leeching as possible.

1520. Gargles, in this state of the disease, are always detrimental; as they aggravate the inflammation, by the violent and inverted action which they induce. As a palliative, a mixture of equal parts of nitre and loaf sugar, finely powdered, occasionally put on the tongue, and, as it melts, allowed to trickle over the

* Take a tea-spoonful of Cayenne pepper, pour on it a gill of boiling water, stir for a couple of minutes, and then let it settle clear—let the throat be gargled with a portion of it every four hours.

inflamed surfaces, is oftentimes highly serviceable; as is also the stream of water, or vinegar and water, applied by Mudge's inhaler, or, as a substitute, a common tea-pot.

1521. But should the disease obstinately run its course to supuration, (which may be known by the surface becoming of a yellowish hue, and by the throbbings and disposition to rigour,) they may, in urgent cases, be opened. With this view, emetics were formerly employed. But the practice is painful and unnecessary, as it may be readily done by puncture. Having discharged the matter, mild detergent gargles, as sage tea, honey, and vinegar, should be directed, to cleanse the parts, and dispose them to heal kindly.

1522. As regards the erysipelatous species of the disease, the treatment is somewhat different. We rely more on topical bleeding, and the vesicatory applications; and where aphthæ or sloughs appear, on stimulating gargles; and, in the event of extreme debility supervening, the system is to be supported by bark, wine, the carbonate of ammonia, and whatever else enters into the treatment of putrid sore throat.

1523. If due attention, however, be paid to the forming stage of this disease, it can very frequently be arrested *in limine*: for this purpose, stimulating external applications are, for the most part, efficient. The spirit of ammonia, of turpentine, or a mixture of the flower of mustard and vinegar, are the best. They should be applied immediately over the throat, and should be permitted to remain, until they produce decided irritation: they may be repeated when this effect disappears.

1524. To such children as are subject to this affection, the above directions are highly important; and subsequent returns may often be prevented in those that can gargle, by a persevering use of alum water, or an infusion of nut galls, in the proportion of half an ounce of the powder to a pint of boiling water, and then simmered for a few minutes. This must be strained off, and used early in the morning, and on going to bed. We have found the following better in warm weather than the one just suggested. Pour half a pint of brandy or whiskey, and as much water, upon an ounce of powdered Aleppo galls, and shake them several times a day for a few days—let it then settle, and pour off the infusion for use. With a quantity of this the throat should be gargled the first thing in the morning, and the last at night.

CHAPTER XXXI.

CYNANCHE PAROTIDÆ, OR MUMPS.

1525. This disease consists in an inflammation of the parotid glands, of the phlegmonous kind. It is often confined to one side; though more generally to both; sometimes the maxillary glands are also implicated, and hence, the swelling of the jaws.

1526. For the most part, this is a disease of but little moment; especially, if it occur in the warmer season of the year. But at other times, there is much constitutional disturbance. Rigours, followed by much fever, sometimes happen, especially, during the variable weather of early spring. The first sensation of inconvenience, is about the angle of the lower jaw: this part presently becomes painful upon moving the head; a tumour is now perceived at the part, which goes on to increase until the fourth or fifth day; after which it gradually subsides, if not maintained by fever. It is not unusual for one side to be first affected, and after this has nearly run its course, the gland upon the opposite takes on inflammation, and also runs its course. When this happens, the disease becomes more protracted and painful.

1527. We have occasionally seen severe suffering from this complaint: this is in consequence of a high degree of inflammation, and an excessive enlargement of the gland. The jaws become closed, and deglutition is performed with much difficulty. The ears are now and then much pained, as in common ear-ache. The stomach is sometimes annoyed by nausea, or disturbed by vomiting; and in some few instances, we have witnessed excessive fever, and even delirium.

1528. When this complaint is unattended by much fever, its progress is regular, and its termination favourable—in such case, it is scarcely an object of medical discipline; at most, it requires but lenient purging, a low diet, and some mild topical applications, as warm sweet oil, or hog's lard, and the pained parts kept warm, by flannel. Care, however, should always be taken, even in the mildest forms of this disease, that the patient be not exposed to the risk of taking cold; as a remarkable peculiarity

attends this complaint; which is its disposition to metastasis, or translation; to the testes, in males, and to the breasts, in females; especially, in adults.

1529. In the severer forms, however, of this complaint, active measures are sometimes indispensable; bleeding to a considerable extent we have occasionally found necessary; brisk purging, and the most strict observance of an antiphlogistic regimen.

1530. Occasionally, we have been obliged to have recourse to topical depletion by leeches, and this followed by warm cataplasms of bread and milk, to promote the farther discharge from the bites of these animals. The mercurial purges appear to answer best in this disease; especially, if their operations be promoted by either of the neutral salts.

1531. Should a translation take place, it may be accompanied by many distressing symptoms. In the male, we once saw the testes prodigiously enlarged; much suffering was endured, and great hazard was incurred by the change. Violent fever, and delirium accompanied this change of seat of the disease, and it required a perseverance in very active remedies to subdue them.

1532. In the female, the breasts are the seats of the metastasis; they sometimes enlarge very much, and become extremely tender and painful; but we believe they never run on to suppuration.

1533. In the treatment of this complaint, under a change of seat, regard should always be paid to the part originally affected. With this view, we have always blistered the parts immediately over the parotids, and, we think, with decided advantage. If the change have taken place in the male, we also exhibit an emetic, and apply warm vinegar by means of flannel to the scrotum, and this to be repeated from time to time. A brisk purging should also be instantly instituted, after the operation of the emetic is entirely over, provided it, and the blistering, have not been successful in recalling the morbid action to the original seat of the disease.

1534. In females, besides blistering and purging, (for with them it is doubtful whether emetics are useful in this condition,) we apply warm vinegar by means of flannels, as directed above, to the inflamed breast. We have never seen any permanent evil

follow these translations; though several such are recorded by authors.

1535. This disease, like several others, affects the system but once; it is supposed to be contagious; but whether this be well founded we are not prepared to say—it is almost always epidemic, at least, in this country; which may, with much propriety, call in question its contagious nature.

CHAPTER XXXII.

OF CYNANCHE TRACHEALIS, OR CROUP.

1536. It is not essential to our purpose to inquire whether this disease was known to the ancients, or is one of comparatively modern origin. It is now sufficiently ascertained, that it is one of too frequent occurrence in this, as well as in many other countries; and, also, that it is one of too frequent danger.

1537. This complaint is almost altogether confined to the period of childhood; and is most frequent in infancy, or before the fifth or sixth year. It is affirmed, particularly by Cullen, that this disease rarely attacks infants till after they are weaned; and that there is no instance of its occurring in children above twelve years of age. As a general rule, this may be correct; but our experience has furnished us with a number of exceptions. We have seen it in its most formidable shape, in children at the breast; and we have witnessed death from it in the adult.*

* “The croup chiefly prevails in children from a short period after birth, until puberty; attaching itself to particular families.” Cheyne, p. 15. To the truth of these observations, we have frequently borne witness. But we have seen this complaint after puberty, and in adult age, though Dr. Cheyne says, “I have heard of no example of this disease after the fifteenth year.” He says, farther, “I have imagined this to depend on the change which happens in the constitution at puberty, and, perhaps, in a more peculiar manner, in the change which the upper part of the windpipe undergoes,” p. 23. This is ingenious; and, probably, it is owing to this circumstance that it is a rare disease in adult age; but that it occurs even at late periods of life is certain. We have attended a lady within the last six years, who is now upwards of forty, several times, (certainly five,) with threatening attacks. M. Guibert is of opinion, that “various anatomical and physiolo-

1538. Children of a florid complexion, and enjoying high health, and especially those inclined to be fat before two years, are more obnoxious to it than those of an opposite temperament. It is a disease of more frequent occurrence in some situations than in others; and those which are near waters of great extent are more exposed to it than children in inland situations: in a word, where a cold, and moist air unite; and especially, when it suddenly alternates, with a dry, warm, air. Nothing, perhaps, can be more satisfactorily proved, than the agency of cold, moist air, in the production of this complaint; especially, in the spring and fall. So much so, indeed, is this the case in certain situations, that the mothers of such children as may be disposed to this disease, dread the prevalence of that wind, which shall bring with it both. Thus, in this city, a north-east wind in early spring, or fall, is almost sure to produce, or reproduce, this complaint in those who are disposed to it. But, with such, almost any sudden transition, which shall too suddenly arrest perspiration, will be attended by the same consequences.

1539. Mechanical causes have produced a disease having all the characters of croup from other causes; thus, Mr. Balfour in-

gical circumstances concur in rendering the croup more frequent in infancy, and in giving it its distinguishing characteristics. The principal of these are, 1st, The straightness of the windpipe, and particularly of the glottis; 2dly, The great sensibility of the mucous system in general, of which sensibility the membrane lining the respiratory passages has its full share; 3dly, The extreme difficulty of expectoration at this age, a circumstance which favours the accumulation of mucus in the windpipe, and consequently the obstruction of the bronchial ramifications; 4thly, The activity of the circulation, which readily explains the ready occurrence of inflammations at this period of life, as well as the intensity of their symptoms and the rapidity of their progress; 5thly, The abundance of matters furnished by the secretions and exhalations, particularly those of the cutaneous and pulmonary transpirations, and of the mucous secretions of the air passages; 6thly, The close sympathy which unites these latter functions, a sympathy which enables them mutually to support each other, and which occasions the increase of action in the one, when the activity of the other is diminished; 7thly, The fineness and softness of the skin's texture, the light clothing worn by children, their imprudence in exposing themselves to cold when they are sweating profusely, and becoming suddenly inactive after severe exercise." (*Reserches Nouvelles et Observations Pratiques sur le Croup et sur la Cocqueluche, &c. p. 7.*)

As a prophylactic, we have been assured by Dr. Dupuy, that ten drops of spirit of turpentine, morning and evening, have been found by Dr. Mettauer highly serviceable.

formed Dr. Home, that he had "attended a child in a disease, which from the similarity of voice appeared to him to be croup. The child died. When opened, a piece of shell, which the child had sucked in with its breath, was lying across the trachea, about an inch below the glottis, and the membrane was inflamed and dry." "Here," continues Dr. Home, "was an artificial croup raised, from which we may evidently perceive how the voice is altered in the natural disease."*

1540. This disease attacks in one of two ways: 1st, by a hoarseness, which is perceived upon coughing, and which may continue without increase, for even several days, or until, perhaps, the sudden application of some exciting cause, as a change in the temperature of the air. For exposure to cold and damp, or to a check of perspiration, is sure to call forth some of its more formidable symptoms; as, more or less difficulty of breathing; an increase of cough without expectoration, and fever: this form is longer running its course, than the one about to be mentioned, but is less obedient to the powers of medicine.

1541. Or, secondly, it may attack with the most alarming suddenness, where no such onset was suspected. When it is thus prompt in its appearance, it menaces life from the moment of its invasion; and if its terrible march be not very speedily arrested, it but too frequently triumphs, in death.

1542. But whether the croup insidiously steal upon its victim, or suddenly threaten it; the latter part of the evening, after a short, but rather disturbed sleep, and about two or three o'clock in the morning, are the most certain periods for it to declare itself—hence, the frequency of our first attendance, during the night.†

* Inquiry into the Nature and Cure of Croup, p. 49.

† Dr. Cheyne says, "The disease generally comes on in the evening, after the little patient has been much exposed to the weather during the day, and often after a slight catarrh of some days' standing," p. 15. "The evening is the most frequent period for an attack of this complaint; but for this purpose, it is not necessary that "the little patient" shall have been "much exposed to the weather;" for we have often witnessed this disease, from the mere prevalence of a north-east wind, and where, in consequence of this wind, every precaution has been taken to guard against its influence, by confining the child, and keeping it warm. We have elsewhere declared, (1544) that catarrh is not a necessary forerunner of this complaint.

1543. With the exception of hoarseness, we have never observed any premonitory symptoms to this disease; for we cannot with propriety consider a slight catarrhal affection, as properly belonging to this complaint, though they may occasionally precede the croupy symptoms. Cheyne's account is rather too poetical for ordinary occurrence; or, at least, we cannot acknowledge we have ever witnessed, (and our own family has furnished us unfortunately with but too many examples,) that the patient "shuns his play fellows, and sits apart from them, dull, and, as it were, foreseeing his danger," p. 16. On the contrary, we have seen many instances, where this disease has attacked children, and that with great violence, after their having spent their evenings in high mirth, and merriment.

1544. It must, however, be confessed, that we have known children indisposed, and dull, from catarrh, previously to the attack of croup; but, in these instances, the latter was not anticipated from any of the then existing symptoms; consequently, this previous condition did not necessarily belong to, nor, strictly, precede the latter. We believe it to be familiar to almost every practitioner, that croup may supervene upon catarrh; not, perhaps, ever as a consequence, but as a coincidence: for catarrh is owing to a peculiar condition of the mucous membrane of the nose and windpipe; and that croup may form, or grow out of this affection, it will at least require an alteration of that condition, and not a mere increase of its force; for in the severest catarrhs we witness—catarrhs, which require not only prompt, but extremely active treatment, croupy symptoms do not make their appearance, as a necessary consequence. In this opinion, we are happy to find ourselves confirmed by an observation of the celebrated and accurate Laennec, whose work upon the diseases of the chest has been lately most ably translated by Dr. Forbes. He says, p. 120, "The false membrane which so frequently forms on blisters, is, of itself, sufficient to prove that it is much less to the degree than the nature of the inflammation, that we are to attribute this concretion or coagulation of pus in certain cases. Indeed, the cause of it is much more probably to be attributed to some peculiar disposition of the fluids, than to any affection of the solids."

1545. From this, it would appear, that it is not sufficient for the production of croup, that the mucous membrane of the wind-

pipe be merely inflamed; but that it requires a modification of inflammation, to induce it.

1546. It may be farther observed, that during the prevalence of catarrhal affections croup is more rife than at other periods; not that the one produces the other (1544) but because, during such periods as the spring and fall, or the very moist and open weather of winter, there is a stronger disposition created to these diseases; and that they have, at one and the same time, the same exciting causes.

1547. We have uniformly observed the insidious approach of this complaint, to be less under the control of remedies, if its first stage be neglected, than when the attack is sudden, however violent that attack may be. This is doubtless owing to its first symptom, hoarseness, being neglected. For this reason, we would wish to put parents upon their guard, whenever this symptom may take place; and to assure them, from long experience, that it is one of a most dangerous and threatening character. So attentive have we been to this forewarning in our own family, (and we have taught others to be equally vigilant,) that this symptom was attended to immediately, and opposed by most active remedies; and we have every reason to believe, that by the means recommended for this purpose, we have stopped this formidable complaint *in limine*, in very many instances. It is true, a hoarseness passes off sometimes without much mischief; but this is not the hoarseness of croup; for this, we believe, never takes its leave spontaneously.

1548. The hoarseness, which disappears spontaneously, is very distinct from that of croup; the difference, however, cannot well be conveyed by words, unfortunately sometimes for those who may be assailed by it.* This, however, may be observed, that there is a certain clearness and distinctness in the croupy sound, that does not attend the other; the one, (the croupy) seems as if it issued from a metallic instrument; and the other, from one of

* Dr. Ferriar, observes, (Med. Hist. Vol. III. p. 137,) "Children who are subject to croup, are sometimes seized with the deep, barking cough, which will increase to such a degree as to create much alarm, about the usual time of the dangerous exacerbation; yet it will decrease again, and at length go entirely off without any other remedies than common demulcents. Cases of this kind, I suspect, have been described as genuine paroxysms of croup; and very trifling methods of cure have been recommended, in consequence of their apparent efficacy in the spurious croup, which always cures itself."

a less vibrating material. The ear, however, by long habit, may learn to distinguish between them; and when once instructed in this discrimination, never loses its tact. Again, we may observe, that the evanescent hoarseness is almost always accompanied by a little soreness of throat; while that of croup, we believe never is. Again, the first is perceived in common speaking; whereas, that of croup is only discernible, in the commencement, by coughing. Lastly, some little pain and soreness are observed about the posterior fauces, after coughing, in the one; which never happens in that of the other. It may not, however, be amiss to observe, that a mere loss of voice, must not be mistaken for croupy hoarseness, as we have known it to be on several occasions, to the great terror of an anxious parent.

1549. In this, and, perhaps, in every other country where croup is of frequent occurrence, every sudden difficulty of breathing, accompanied with cough, in children, is mistaken for it. Thus the acute pituitous catarrh is mistaken for it. Laennec says, “This disease is characterized by an extreme oppression, attended by a copious pituitous expectoration. It sometimes begins as a common cold; but after a few hours, or even minutes, its severe character is soon declared by the violence of the cough, the intensity of the dyspnœa and oppression, the lividity of the face, marks of cerebral congestion, disordered circulation, and coldness of the extremities. In children it is sometimes mistaken for croup.”*

1550. But it may be proper to advise, whenever hoarseness takes place, not to trust too much to the discriminating powers of the ear, for its nature; but instantly to proceed upon the supposition that it may be of a dangerous kind; especially, as the remedies employed for the one, will most certainly relieve the other. It would, therefore, be erring on the right side, were we to treat this hoarseness as if it were of a mischievous character, though it might have passed away without such treatment.

1551. It would seem necessary to the well understanding of the progress of croup, and its mode of treatment, that it be divided into three stages;† 1st, the forming stage; 2dly, the completely formed stage; and, 3dly, the congestive stage.

* Laennec on the Chest, Forbes' translation, p. 80.

† Dr. Cheyne divides this disease into but two stages: “The incomplete, or inflammatory;” and, 2dly, “the complete, or purulent.” In the first, “the mem-

Of the First Stage.

1552. We have already remarked, (1548) that one of the first and most certain signs of this complaint being about to take place, is a peculiar sonorous hoarseness, when the patient coughs, but which at this period does not affect the speaking voice; this peculiarity exists for a longer or shorter time, without much increase, even for several days, in some instances; while in others, the interval, or stage of formation, is very short, but very decidedly marked. This hoarseness may in some instances be accompanied or preceded by catarrhal symptoms, (1544) but not necessarily.* In this stage, when not attended by catarrh, we find, for the most part, the circulatory system undisturbed, and the respiratory not confined, nor even hurried. The child, generally, is as cheerful as usual; and its appetite, and digestive powers, are undisturbed. In a number of instances, where the disease was making an insidious attack, we have seen children exert themselves even pretty violently, without creating any uncommon hurry in the breathing, or occasioning the slightest embarrassment in it; yet these very children, in the course of a few

brance is not yet formed, in the second, it is fully formed." This division does not comprehend the whole history of the disease; for the forming stage is one of the greatest importance in the treatment of the complaint; and, therefore, merits, we conceive, the distinction we have given it. Besides, we cannot regard Dr. Cheyne's second stage as representing this disease in its complete form: since the whole of the phenomena of that stage, are but consequences of the previous, or his "incomplete, or inflammatory." And he himself admits this, in several places of his lucid and excellent essay. M. Guibert divides the disease into, first, the stage of *irritation*; 2dly, that of albuminous secretion; and, 3dly, that of suffocation, or debility.

* The inflammatory affection of the larynx is, doubtless, sufficient to account for the alteration which takes place in the sound of the voice and cough." Cheyne, p. 22. We believe, there is, in most instances, an intermediate condition of the larynx, in the commencement of this disease; which is a degree of excitement in the part, accompanied by a little thickening of the mucous membrane, but which do not absolutely amount to inflammation: for, could not hoarseness be produced by any thing short of inflammation, there could not be that species of croup, which Dr. Ferriar, and Dr. Cheyne himself, admit the existence of, namely, the "spurious croup." (See note to par. 1548.) We are farther disposed to believe in this condition of the trachea, or larynx, in consequence of the very speedy removal, in many instances, of this symptom, when sufficiently promptly attended to, by the remedies recommended for the first stage of this complaint.

more hours, were reduced to the last extremity; and some of them did not escape with life.

1553. We think we have observed, however, in this forming stage, especially in the insidious attacks, the hands to be more than usually cool; the face to be rather unnaturally pale; and the skin to resemble, in a small degree, the cold stage of an intermittent, but not attended by a sense of cold; this state of collapse remains for several hours, in some instances, before the system is roused to reaction. But where the attack is sudden, we are by no means certain, that this condition always precedes the febrile state, which so frequently is awakened, and made to accompany this complaint.

1554. During this period, however, the mucous membrane of the nose is observed to be affected; since, the secretion in the nostrils is either arrested altogether, or very much diminished; and continues to be so during the whole course of the disease, unless it terminate favourably. The cough is short, dry, and sonorous; or, if any thing be expectorated, it is thin and whitish, and in very small quantities. If the throat or fauces be inspected, nothing unusual, (at least, as far as we have observed,) shows itself. The back part of the tongue, is, perhaps, rather more loaded than is natural, but it is far from being remarkable.*

1555. After the continuance of the above symptoms for a longer or shorter time, a change takes place, by an aggravation of all of them; and, at the same time, others are added; and these will constitute the

Second Stage, or that in which the Disease is completely formed.

1556. We now observe the hoarseness to be increased, and to affect the speaking voice;† that is, the tone of hoarseness is evidently deeper, more ringing, and betrays itself in every attempt

* "When in the urgency of the attack, the fauces and neck are examined with a view to investigate the cause of the symptoms, (hoarseness, &c.) even when a sense of heat is complained of in the throat, the tonsils are not swelled, and but little inflamed." Cheyne, p. 18.

† It may be remarked, as a general rule, that where the voice becomes suddenly affected by hoarseness, which discovers itself in speaking, and without being so in coughing, that it is not the hoarseness of croup. This kind of hoarseness, however, is more common to adults, than to children.

to speak; the cough is more frequent, the spells longer, and a degree of exhaustion, attended by an increase of the difficulty of breathing, follows each effort; the face becomes flushed during the coughing; but generally subsides as the circulation becomes more equal, after the exertion, but leaves the cheeks, or, perhaps, only one, redder than natural.* The circulation is now much hurried, in most cases; at other times, it is very little disturbed: when this latter is the case, the face is seldom flushed, and the hands and skin of the extremities are rather below the natural standard of heat. The child is drowsy, and falls into frequent, but disturbed slumbers, from which it is generally roused, by the most heart-rending cough, and an increase of oppression. The child raises itself up, if sufficiently old to do so; or, if not, elevates its head, with desire to gain air more freely. This state of things does not last long; for, if the progress of the disease be not arrested here, it marches with rapid haste to the

Third, or Congestive Stage.

1557. At this period, the cough is attended with some expectation, of a thin, or frothy mucus, which affords no relief: it is more frequent in its recurrence, and more permanent in its duration; sometimes so much so, as to threaten strangulation—the child becomes much exhausted by these efforts, and throws itself back as if in despair; but from which it instantly springs, from the feeling or dread of instant suffocation. It cannot now lie down; and it either throws its head much in advance, as in asthma, or bends itself very much backward; or it finds no relief but in a supine position, and that, apparently, the most unfavourable

* We believe there cannot exist a doubt of the condition of the mucous membrane of the trachea at this time—every thing would seem to declare it to be in a state of active inflammation. The formation of a deciduous membrane, which is sometimes thrown up, or after death proved by dissection to exist, and even the remains of turgid vessels in this part, all announce inflammation of an active kind to constitute the approximate cause of this disease.

The following is Laennec's "Anatomical Characters" of croup. "Croup is an inflammation of the mucous membrane of the air passages, with exudation of plastic pus, (coagulable lymph,) which becoming concrete at the very moment of its formation, lines the (inner?) surface of the membrane to a greater or less extent. When this false membrane is removed, the subjacent tunic is found of a deep vivid red colour, occasionally livid, and somewhat thickened," p. 119.

to easy breathing. It is restless in the extreme, and alternately tries every position, without finding relief from any.

1558. The face is no longer flushed; a dark lividity takes its place, which sometimes spreads itself, even to the neck; the lips partake of this change, and the gums become pale and white, while the tongue is not unfrequently blackish, as if the blood were retained in it by a ligature. The forehead becomes shining, and the skin looks as if it were tightly stretched over it—it is wet with cold perspiration, as is now, indeed, almost every part of the body. The pulse is small, frequent, fluttering, and contracted. The heart beats with violence, nay, sometimes audibly. The auxiliary muscles of respiration, are now called into requisition, and this process seems only maintained by their aid; a deep hollow is made immediately below the xiphoid cartilage, most probably by the severe contraction, or efforts of the diaphragm; and the action of the heart, is distinctly seen, even at a distance from its seat.

1559. Though the cough is now more frequent, and the oppression much increased, the hoarseness is neither so great, nor so sonorous. It is now almost a loss of voice, and the child, when it speaks, seems to employ for this purpose a loud whisper. Even when it coughs, the voice is less harsh; or rather it has lost in a degree, that appalling, brazen, vibratory sound, with which the two first stages are attended. This change of tone has but too often misled the inexperienced ear, to a belief, that the disease was yielding; and thus has given rise to hopes, that would, but too soon, for ever be blasted.

1560. Thirst, oftentimes, becomes so intolerable, as to render the demands for drink both frequent and clamorous, though every attempt to gratify be apparently at the risk of suffocation. The countenance is now anxious beyond expression; the eyes become most piercingly brilliant and beseeching—they eloquently implore a relief, which neither affection nor science can afford; and the poor sufferer expires, with a look, full of supplication and anguish.*

1561. This disease runs its course variously; sometimes it

* We have sometimes seen, a short time before death, the little patient lie on its back, apparently resigning itself to a fate against which it could no longer struggle, and eventually expire, and that with a complacency, that would create a hope, that its sufferings had terminated even before death had relieved them.

lingers for days, while, at others, its career is finished in a few hours. This variety in termination will depend upon the constitution; upon the period at which remedies were applied; upon the nature of the remedies, and their power or influence upon the system.

1562. Dissection proves that this disease, in many instances, kills by suffocation, from a mechanical cause; at other times, no such obstruction can be found—therefore, pathologists declare spasm to be the cause, where the mechanical one is not present. This, by some, has been extended, even to the formation of a distinct species of croup; namely, the spasmodic; a kind we have never witnessed. By others, this has been modified, and the pathology of croup made to consist in inflammation and spasm united. We do not believe in the presence of spasm, in either of the two first stages of this complaint; it may take place, and probably does, sometimes in the last. “Dr. Marcus, of Bamberg, in Bavaria, looks upon all fevers as inflammation of some one organ or other, and as entirely seated in the arterial system, regards croup as a local inflammation alone, utterly independent of spasm, which neither exists here, nor in fevers of any kind.”*

1563. Some have disputed the formation of a membrane within the trachea; but it can only be by those who are not in the habit of investigating diseases, by dissection—we have seen it, more than once, and, of course, we are convinced of its existence. Others, who will not venture to deny the presence of a foreign body within the trachea, deny it to be a membrane;—they declare it to be nothing but inspissated mucus, and not a membranous product. At this day, there can be nothing new in the declaration, that if lymph be poured out from vessels in a certain state of action, upon either exposed surfaces or within cavities, that it will form membrane: the pleura and the peritoneum furnish almost daily examples of this kind.† This mem-

* Good's Study of Medicine, Am. Ed. Vol. 2d, p. 235.

† When this substance is chemically examined, “the secretion appears to consist chiefly, if not entirely, of the gluten, or coagulable lymph of the blood, diluted with its serosity, and copiously combined with that peculiar substance of the blood, which has received the name of fibrin.”—*Good's Study of Medicine, Am. ed. Vol. 2d, p. 234.* Guibert says it consists of albumen.

“It is a little singular that children should be chiefly subject to its attack, at

brane extends from below the larynx to the bronchial ramifications; and we once saw it within them.

1564. Laennec, p. 120, says, "The false membrane of croup corresponds exactly with the form of the canals which it covers. Its thickness is usually somewhat greater in the larynx and trachea than in the bronchia, and varies from less than half a line to a line. Its consistence is that of boiled white of egg, but this usually diminishes towards its extremities, so that it becomes sometimes, in this situation, scarcely more solid than the thick phlegm of catarrh. It is of a white colour, with sometimes a shade of yellow, and is almost entirely opaque."

1565. From what has been said, it will be evident, that nothing but the use of very efficient remedies can arrest the progress of this disease; and for them to be availing, they must be employed sufficiently early, to prevent the inflamed lining of the trachea, from relieving itself by effusion. For when this happens, the case, for the most part, is hopeless; though some few instances have occurred, where recovery took place after its formation—but their rarity only shows the little we have to hope at this stage, and the importance of early attention to this disease.

1566. It is now so generally admitted, that this is a local disease, and one consisting in an active inflammation of a highly important part, that there is scarcely any dispute as to the general mode of treating it, though there may be some variety in the detail, and the agents intended to fulfil the same obvious indications. Therefore, with a view to the better illustrating the particular mode of treatment, we shall follow the stages we have made this disease to consist of, and shall begin with the mode of treating the

First Stage.

1567. If due attention were paid to the timely application of appropriate remedies in the forming stage of croup, we have every reason to believe, that this complaint could be stopped *in limine*, in nineteen cases out of twenty. It is to the ignorance of what a hoarseness may lead, that this obvious, and almost certain symptom, when it first manifests itself, is neglected; and

whose age fibrin is not peculiarly abundant, and whose blood contains comparatively but a small portion of azote, which in fibrin is so large a constituent."—*Ibid.*

to this neglect must be attributed, the too often fatal termination of croup.

1568. A sufficient experience justifies the declaration just made; and the same experience will, we trust, screen us from the imputation of becoming alarmists, when we declare that no hoarseness in children can be neglected, but at the risk of life. We can call to mind but too many instances of fatal issue, where this friendly warning was unheeded, because its tendency was not understood. Our anxiety to abridge the ravages of this terrible disease, has led us to dwell upon this point longer than would be necessary for the mere medical reader; but we hope he will excuse us for our cautions, which, though not necessary to him, may be very important to others, who may honour this work with a perusal.

1569. It has been our misfortune to have witnessed but too much of this disease; and, unhappily, too much in our own immediate family. We were early instructed in all its phenomena; and but too sorely taught its deadly tendency. Our misfortunes made us more than vigilant—made us tremblingly apprehensive to every thing connected with this disease, especially its formation.* But, perhaps, we have derived advantages from our losses;

* The ear of one who has lost a child with this complaint, becomes so extremely sensitive, that it instantly gives the alarm as soon as a hoarseness is perceived; and sometimes leads to an interference, that would, perhaps, not be justified upon any other occasion. To illustrate this, and to show how the feelings may be impelled, under such circumstances, we will relate an anecdote which befell ourselves. Passing a house, towards evening, in one of our streets, our ears were assailed by a hoarse cough, which proceeded from a shivering little boy of about three years old, who was at the door, but which was shut against him.

He appeared very cold: it was a drizzly evening, and the month was November. At this time, our loss of an only child with croup, was recent; and we were labouring under all the wretchedness such a loss could inflict, and of course were peculiarly sensitive to every thing which reminded us of a disease, which had created for us so much misery. We knocked at the door, and begged to see the mother of the child: the person before us proved to be the one we wished to see. We represented to her the dangerous situation her little boy appeared to be in, and begged she would immediately send for her family physician, to visit the child, advising, at the same time, what we judged proper to be done, until he should arrive. The mother laughed at our fears; and said it was nothing but a little cold the child had taken, and declared he would be well enough in a day or two, "without any doctor stuff."

We took our leave; but feeling interested for the child, we went next day to inquire for him; and was told by a next door neighbour, that he had died early that morning of "hives:"—our feelings can be better imagined than described.

and most happy shall we be, if they can be made subservient to the general good.

1570. For many years, nothing could exceed our horror, when called to attend a case of croup—for our too faithful ears could not forget the appalling sound of the breathing; alas! they were instructed by instances of such endearment, that memory was almost a curse.

1571. We were thus forced to a knowledge of the rise, progress, and issue of croup—would we could add, we were equally well instructed in its management—to this, however, we make no particular pretensions; though we think we have arrived at some certainty in arresting its march. Our particular horror of croupy hoarseness, led us necessarily, after a time, to the very early application of remedies for its removal—hence, for the last twenty years, we have never suffered it in our own family, to exist a single hour, without an attempt to stop it.

1572. As this disease most commonly attacks in the night, (1542) we have ever at hand, the remedies about to be mentioned, that a moment may not be lost in their application. It is, therefore, our constant habit, the instant we observe the croupy sound, to inflame the external throat by the application of the spirit of turpentine, hartshorn, or mustard and vinegar. This we repeat, if the first have not subdued the hoarseness, as soon as the rubefacient effect has subsided; for it may be proper to observe, we do not carry the stimulation to blistering. In aid of those external applications, we administer, in doses suitable to the age of the child, “the compound syrup of squills,” or Coxe’s hive syrup, as an expectorant, or, if necessary, as an emetic.

1573. If the hoarseness do not yield to the turpentine, or to expectorant doses of the syrup, we urge the latter, by quickly repeating the dose, to an emetic effect; but this is rarely necessary, if the complaint have been taken early, or if the throat have been well inflamed. For we can most truly declare, we have very often seen this disease subdued in an hour or two. But should the hoarseness not disappear, though much diminished, we continue the use of the syrup, until it do. Should the bowels be confined, we give a dose of castor oil, in aid of the general intention.

1574. With the same intention, we regulate the diet—or rather make it consist of barley water, or flax-seed tea; we confine the

patient to an atmosphere of moderate temperature, and most sedulously guard him against exposure, or a draught of air. The throat must be protected by a piece of flannel, or some other warm covering, after the turpentine or mustard has been removed.

1575. It is truly astonishing, with what certainty this plan arrests this disease, in by far the greater number of cases. An experience of very many instances, fully justifies our commendation of it. We, therefore, earnestly advise every mother, and especially those who may have children subject to this complaint, to have immediately at command the articles just mentioned, and to employ them, as just directed, the instant hoarseness may appear. If this be faithfully attended to, we shall rarely have an opportunity to prescribe for

The Second Stage.

1576. It may, however, happen, that the plan just suggested, may not be availing; that the proper time for their application has been lost; or, that we have not seen the patient, until the second stage had been completely formed: in either of these events, we are obliged to prescribe for the case as it presents itself. We shall find the system in the second stage, (1556) in one of two conditions: namely, 1st, where the disease is completely formed as regards the state of the trachea; but without the arterial system being much affected: or, 2dly, where the action of the arterial system is much exalted, in consequence of the inflammation of the trachea. These two conditions, in our opinion, require some difference in the mode of treatment; and, first, of that condition, where the blood vessels, of the system at large, are not much affected.

1577. In this case, the force of the disease is mainly spent upon the organs immediately concerned in respiration; hence, the cough is more frequent, nay, sometimes almost incessant; the hoarseness less deep, but more sonorous, and vibrating; no expectoration, or in a very trifling degree, and that of unconcocted serum, the discharge of which affords no relief. The face, for the most part, rather pale, or partially flushed; the nostrils very dry; the hands and skin generally rather below the natural standard; the eyes somewhat blood-shot; the pulse

frequent, and small, and the respiration laborious, and every hour becoming more and more so.

1578. In this situation, we have thought, the remedy so exclusively relied upon by many, namely, blood-letting, always injurious, or certainly never beneficial—we, therefore, cannot, agreeably to our present impressions, recommend it; since, under such circumstances, we never now employ it, either generally or topically. We always commence the treatment, by the stimulating applications (1572) to the throat; and quickly administer a brisk emetic of the tartrate of antimony; or, should it be immediately desirable to procure evacuations from the bowels, we combine with it, liberal doses of calomel, according to the following formula, for a child of two years old, or rather more.

R.	Tartrate of antimony	gr. ij.
	Calomel prepared	gr. xij.

These to be intimately mixed, and divided into eight parts—one of these to be given every twenty minutes, or half hour, mixed in a little thin syrup, until an emetic and cathartic effect be produced. Should it prove pretty powerfully emetic, we make the intervals longer; that is, once in an hour, and more seldom in proportion to the effect, until the bowels be freely moved, or even purged.

1579. After the medicine has operated freely, we order the hive syrup in suitable doses, (1572) every half hour, or hour, or more seldom, as the effect may be more or less ample. Should the disease not have yielded to this discipline, we give calomel in pretty large quantities, every two hours, as long as the bowels will bear it without being too much purged; always recollecting, that the expectorant doses of the hive syrup are not to be discontinued, unless there be much nausea.

1580. If the above remedies make a suitable impression upon the disease, an abatement of all the unpleasant symptoms will take place, and give us some assurance of a favourable issue. In the condition of the system now under consideration, we must not neglect to observe, that we reckon among the favourable signs, a greater warmth of skin, with a slight disposition to perspiration, and an increase of force, and vigour in the circulating system; for when these take place, there is less risk of its running on to the congestive stage, or at least this period is delayed. Besides, this change is an evidence of the disease being now less

concentrated, and that the system can now bear farther depletion, with advantage, should it be judged necessary. This is so decidedly the case sometimes, that we can, with much profit to our patient, abstract blood, either from the system generally, or from near the parts, by cupping. In a word, the disease is now converted into the second condition; or where the arterial action is much exalted.

1581. In this second state of the disease, the symptoms are rarely so appalling as in the first, though of the same general character. The disease is less masked, and we, consequently, have a more open enemy to deal with. In this condition, we almost exclusively rely upon blood-letting to make a first, and favourable impression; and there are few, who have not witnessed with what promptitude and success this is sometimes effected. The bleeding, to be successful, must be carried to a sufficient extent; that is, until it make a decided impression upon the pulse; or until it flutter under the finger, or a disposition to syncope discover itself.

1582. Some have advised that the blood should be drawn from the jugular vein; there may be an advantage in this, that our present experience does not recognise: certain it is, we should not hesitate to select this part, were we left entirely to ourselves, since its nearness to the diseased parts, would lead to the belief, that they might more certainly and speedily be relieved by it. But to make choice of this vein as a general rule to bleed from, we should have to contend with much prejudice; more, perhaps, than the selection is really worth—but at the same time, we would recommend, that this part should not be lost sight of, in certain ferocious cases, where life may depend upon the difference of influence that the bleeding from one part, rather than from another, may produce.*

* A late writer, Mr. Goodlad, (North of England Med. and Surg. Jour. No. 2) says, "From what has already been said, it is evident that two indications are necessary to be attended to, in the cure of croup; the first is to subdue the inflammation of the windpipe, the other to relieve the oppressed circulation. Unless the first object be attained, no means will avail; nor will it in every case be safe to wait until that can be accomplished, before we relieve the system at large. Danger may be imminent from either of these causes, and we have often to determine whence it is most so, and to regulate our practice accordingly.

"The causes which produce croup, its symptoms and progress, alike indicate the necessity of blood-letting, and this remedy, in comparison with which all

1583. The repetition of the bleeding, must be governed by circumstances; for bleed we must, in some cases, again and again, if the system react with force, and the pulse be found of diffi-

others sink into insignificance, should be immediately resorted to. Any quantity of blood may be drawn by leeches, and the local complaint, in almost all cases, be subdued by them; for if one crop of leeches do not remove it, others must follow, until the breathing become free, or the child so faint that farther depletion would be unsafe. This mode of taking blood, by emptying the vessels, which are inflamed, will, it is evident, afford relief, with least expense to the constitution: but when the complaint has existed many hours, and the jugular vein becomes alternately distended and collapsed, during each inspiration; when the angles of the mouth are drawn downwards, every muscle of the neck brought into action, and the breathing consists of a series of gaspings, there will not be time afforded for leeches, and not a moment must be lost. The external jugular vein should be immediately opened with the lancet, though this operation is sometimes exceedingly difficult, requiring a quick eye and a steady hand to catch it between each inspiration. The struggles of the patient, and the great contraction of the muscles, add to the difficulty; but no consideration should deter us from giving instant relief, and no other method of taking blood seems to afford the same immediate benefit both to the head and breathing. The child may be on the brink of effusion, and every minute lost is matter of serious reproach; but this urgency of the case, which, if not attended to, will speedily be followed by stupor, and that loss of sensibility over the whole frame, so favourable to effusion, renders additional precaution necessary; for if the depletion be carried too far, or the vessels emptied very suddenly, that event, so much to be dreaded, will be accelerated.

“The finger should, therefore, be kept upon the pulse while the blood is flowing, and the farther flow of blood prevented, if the breathing be properly relieved, before faintness is induced. It is safer to trust the farther treatment of the case to leeches, which are, indeed, often necessary even when the jugular vein has been opened, and the loss of blood carried for the time to the greatest extent. This will not be matter of surprise, when we consider how little connexion there is between the arteries ramified upon the inner surface of the windpipe, and the external jugular vein. It is safest, therefore, to unload the general circulation, where that is requisite, from the system at large; and treat the local complaints with leeches, where they can be easily obtained; but if not, the finger may be placed upon the orifice for a short time, when the breathing is relieved; and another and a smaller quantity of blood be taken from the same orifice, until faintness deter us from proceeding farther.

“I have generally directed leeches to be put on the lower part of the windpipe, below the *pomum Adami*, because they bleed quite as well as on the upper part of the tube. The blood is drawn from those vessels, which have most recently taken on the diseased action; the inflammation is thereby prevented from extending, and the vessels, already weakened by disease, are emptied more gradually, and with less danger of their giving way.

“In whatever manner the blood be taken, a degree of faintness must be produced, and kept up for some time, which renders the continuance of inflamma-

cult reduction. But here we would wish to caution the inexperienced practitioner, against making the *difficulty of breathing* the only indication for more blood-letting; this should constitute but one of the considerations; for, of itself, it is not always sufficient; especially in a rapid case, or in one, in which the first stage of the disease was altogether neglected, and the commencement of the second, but feebly treated.

1584. To make a second bleeding proper, there must be a continuation of the same symptoms, though, perhaps, with a lesser degree of force, which made us determine upon this operation in the first instance; that is, the pulse must be firm, the skin warm, the face flushed, and the oppression considerable.

1585. If these conditions obtain, we should not hesitate a moment to draw more blood; and that to an extent that shall produce an evident alteration in the force of the pulse: but two bleedings are not to follow each other, without the interval being employed in the exhibition of other remedies; and among the first of these, are, the emetics, and the expectorants, as has been already advised, (1572 and 1578) together with the use of calomel. In this state of the disease, as in the one just considered, the emetic should be followed by the hive syrup, so as to maintain a nauseating influence, as well as occasionally to provoke the stomach to vomiting.

1586. The rubefacient remedies should now succeed the operation of the emetic; and such a quantity of calomel should be administered, either with the tartrate of antimony, or alone, as

tion impossible, and the patient watched most narrowly, lest reaction come on, and more leeches be necessary."

We have made this long extract to show fairly this gentleman's pathological and therapeutical views of this disease; not, however, with the intention of recommending the practice, for we still maintain our views unimpaired as to the mode of treatment—for in our hands, at least, leeching has been decidedly hurtful. If faintness be desirable, we would very much prefer Dr. Chapman's plan—that is, abstracting blood from the arm until a disposition to syncope be perceived. Or, indeed, this gentleman's suggestion, (though not original with him,) of opening the jugular vein; but not at the moment he indicates—for it is then, we fear, too late, as the symptoms he details, mark the stage of effusion; or, at least, that stage of inflammation, at which it is about to take place; a period, if our observations be correct, that effusion is but hastened by bleeding. We could say much upon the whole of Mr. G's. text quoted; but we did not see his observations, until this chapter was almost in type.

already suggested, (1578,) as to procure a free discharge from the bowels.

1587. The greater the disposition the disease has to run a rapid course, or, in other words, the more sudden and violent the attack, the greater, as a general rule, will be the chance of success from the use of proper remedies, and especially that of blood-letting; for it almost always happens, that the slower cases are attended by an indolent inflammation, or an engorgement, that will not so well bear the loss of blood, or will certainly profit less by it.

1588. When the practitioner may be reluctant to draw more blood from the general system, and yet believes the inflammation cannot be subdued without farther depletion, he generally has recourse to local bleeding—hence the frequency of leeching and cupping in croup.

1589. This practice is recommended by almost every practitioner; and by some, of very high authority; it may, therefore, not only excite surprise, but, perhaps, draw upon us reprehension, when we enter our protest against it; and especially, against leeching. (See note to par. 1582.)

1590. We are free to admit, it appears every way plausible, that drawing blood from near the inflamed part, should be attended with more success, than when it is taken from a part more remote; yet, in the particular instance we are considering, our experience gives a uniform contradiction to the hope of benefit from the practice; though it does not impair the truth of the general position. But this failure of benefit from local bleeding, in the case under consideration, must not be considered, however, even as an exception to the general rule just mentioned, but as depending in a great measure, or, perhaps, altogether, on circumstances inseparable from the operation of leeching itself. The operation of leeching is attended with several circumstances decidedly adverse to this disease: for, 1. It employs considerable time; during which, the patient is obliged to maintain an irksome position, and this may be extremely unfavourable to his breathing. 2. It often becomes important that the quantity of blood to be drawn should be very exactly determined; this cannot be done in leeching—especially as the after bleeding is sometimes very considerable, in spite of every attempt to arrest it, to the manifest injury of the patient. 3.

Their coldness, and the sudden exposure of the throat, after having been warmly covered, is oftentimes so mischievous, that the bad symptoms can be seen to increase during the operation; and are almost sure to follow immediately after. We can most safely declare we never have in a single instance seen it do good; but we have, in a number of cases, seen it do harm.

1591. If topical bleeding be had recourse to, let it be by cups: against these, the objections are not so strong. And, when employed, let it be from between the shoulders, or rather from the back of the neck: when drawn from this place, we have seen it useful. Cups should never be applied over the throat, for reasons sufficiently obvious.

1592. Dr. Cheyne says, "When bleeding is used upon the commencement of the violent symptoms, the relief is often immediate; and I have scarcely believed that I saw the same child breathing softly, who, ten minutes before, lay gasping and convulsed," (p. 17.) We have never had the good fortune to see this sudden good effect from bleeding in a case of genuine croup; we have a number of times witnessed very prompt relief from this remedy, in the spurious, or that kind which is accompanied with sore throat, (1548.) For the vessels of the fauces seem to feel the influence of venesection, more certainly and speedily, than those of the mucous membrane of the trachea.

1593. Neither in the stage of the disease now under consideration, nor in either of the other two, have we ever witnessed any advantage from severe purging: though there is evident use in having the bowels freely opened. Indeed, in the congestive stage, we think we have constantly found it injurious; for it rapidly diminishes the strength, without weakening the disease at the same time. For it would seem there is less intercommunion between the bowels, and the respiratory viscera, than with almost any other parts of the body.

1594. Puking in this stage, (the second,) is manifestly useful, especially when considerable nausea accompanies the operation: it must, therefore, be repeated, as often as the breathing seems to be obstructed by accumulating phlegm. We believe the tartrate of antimony to be the best emetic, in this stage of the disease. The sulphate of copper has been highly extolled lately; in our hands, it has failed.

1595. Blisters are highly recommended by some: as regards

our own experience, we are by no means convinced of their utility, unless it may be in the forming state of this complaint, and at the termination of the second; but even then, we are not in the habit of relying on them. We prefer the rubefacients, (1572) as their powers are more at command, and can be renewed whenever they have ceased to maintain a proper degree of irritation, It has appeared to us, there is a period of the disease, in which blisters may be useful; but are not exclusively to be relied on, as just stated: we have occasionally employed them at this time, and once or twice with marked advantage. It is, when the second stage is merging into the third. At this time, in some few instances, they seem to act with peculiar felicity.

1596. "The warm bath is a very unequivocal remedy; but as it is a simple and popular one, it is generally used along with an emetic, before the physician is called; and together or separately, by their antiphlogistic powers, they in very many instances prevent the formation of the disease." (Cheyne, p. 25.)

1597. There are few remedies in this disease so popular, or so much abused, as the warm bath—it is one, we feel more difficulty in prescribing, than any other of the *materia medica*; for it seems to us to be more uncertain, and varied in its effects, than any other. Nor is this to be wondered at; since, the temperature is never exactly fixed, and each given temperature must be a new remedy; or, at least, a remedy with a different power. Again, the state of the nervous and arterial systems, must be constantly varying; therefore, the effects of this remedy must necessarily be governed in a degree by these conditions. The state of the cutaneous system, must also vary as to susceptibility; therefore, temperature must have different operations upon it; these differences must, of course, lead to very different results; and this, we have so uniformly found to be the case, that we never prescribe this remedy, but with all the uncertainty which must necessarily attend applications empirically made.

1598. Nor can we agree with Dr. Cheyne, in calling the warm bath a "simple remedy," if he mean that it is one without any decided powers; we look upon it as one of extensive influence; and may, therefore, be most easily abused, if not judiciously directed; as it has, unfortunately, become a domestic remedy. Besides, let us call to mind the importance of the surface on which this remedy is to act; either as regards its own

functions, or the functions of parts which so powerfully sympathize with it; and we shall find there is no good ground to consider this remedy as a "simple" one; at least, not agreeably to our definition of a simple remedy.

1599. This, of all the remedies employed in croup, requires the most judgment in prescribing it, and certainly, the greatest caution, to apply it properly. We have never seen it managed with so much address, as not to have made us tremble for the consequences; nor with so much success, as to tempt us to brave them. We can most conscientiously declare, we have never in a single instance witnessed any decided advantage to arise from its application; but we can most truly say, we have had the most unequivocal evidence of injury. We, therefore, never prescribe it, in this disease. In this, we are aware, that we differ from much authority, and especially Guibert, who has written upon croup with much good sense and practical acumen: of the warm bath he is even extravagant (as we think) in its praise. He says, "A very rational means of the cure of croup consists in frequent and reiterated employment of warm baths; of which experience has taught me the good effects." But until subsequent experience shall lead us to a contrary belief, we shall continue to bear testimony against it. We shall take the liberty of joining Mr. Goodlad's observations upon this remedy, as they serve to strengthen what we have just advanced. "Among these," he adds, "the warm bath is one of the most active, and at the same time most injurious; and I cannot imagine how any one, who has once witnessed its effects, can again recommend it in croup. It is, in my opinion, so decidedly hurtful, by quickening the circulation, that I should interdict its use in almost all inflammatory cases. The warm bath, I think, is never useful, unless prolonged until faintness be produced; and in the early stages of inflammatory complaints, it is often impossible to produce this effect, until the heart beats more than 130 times in a minute, which is a degree of excitement I think unwarrantable. If resorted to later, effusion is brought on sooner than it would otherwise supervene; and many practitioners could, I think, call to mind cases, where its use has been followed by unexpected death: the vessels previously emptied, perhaps, by bleeding, having given way, and apoplexy supervened."

1600. Do not let us be understood to condemn this remedy,

when employed by others, because we do not ourselves understand its management; we only mean to confess our ignorance of the proper state, or time, for its application. We are afraid that this remedy has become too much a part of routine in this complaint; therefore, very likely to be abused. There is a popular feeling in its favour, which we are very certain it does not deserve; and in consequence, it becomes “a domestic remedy,” and “is employed before the physician sees the patient,” and that, we fear, to the injury of the individual who is subjected to it.

1601. Laudanum, in combination with antimony, is recommended by Dr. Cheyne, when the febrile symptoms run high—we admit this to be high authority for the practice; but unless we witness more success from this combination in the hands of others, than has been experienced by ourselves, we shall not again be tempted to employ it. Laudanum, as far as our experience goes, has ever been injurious in this stage.

1602. If the disease do not yield pretty early after the formation of the second stage, to the remedies just pointed out, the vessels of the inflamed surface, relieve themselves by effusion, and thus form

The Third Stage.

1603. This stage consists in the formation of a deciduous membrane, (1587, &c.) which, more or less, strictly fills the trachea, or else, in the pouring out of a quantity of purulent lymph, which does not coagulate; but almost as certainly obstructs the air passages. This effusion is not confined, however, in all instances to the trachea; the bronchial vessels relieve themselves, in the same manner; and this, sometimes, throughout the lungs; as far, at least, as the naked eye can trace them.

1604. It is of much importance to recollect this highly important pathological truth; since it will have a strong bearing on the question of an operation, whenever this may be agitated.

1605. The third stage (1557) necessarily is one of great hopelessness; since we cannot, with certainty, get rid of the existing obstruction; or if we could, we cannot alter, or, at least, but very rarely, the disposition of the parts, to perpetuate the difficulty by the formation of new productions.

1606. The indications in this stage, are, 1st, to remove the

obstructing lymph from the windpipe; and, 2dly, to prevent the formation of more, by altering the condition of the inflamed surface of the trachea.

1607. In some few instances, emetics have fulfilled, both the one, and the other indication; and the patient has been thus most unexpectedly snatched from the grave.* The membrane has been more frequently removed from the trachea, than its removal has been attended by success to the patient, after its discharge.

This is a most melancholy truth, and one that should not be lost sight of; especially, as on the removal of the membrane, recovery is so confidently expected. Never shall we forget our feelings when this took place in a beloved child of our own; nor ever cease to remember our disappointment, when we found it to be unavailing.

1608. Michaelis, (Cheyne, case x. p. 65,) relates a case of death after the membrane was twice discharged by emetics; nor is this surprising, since, by the removal of the obstruction, we do not remove the disposition to subsequent effusion; and as long as this continues, there can be no security against new formations.

1609. But this is not to make us abandon an enterprise in which so much *may be gained, if we succeed in removing the obstructing membrane*; especially, as the same author furnishes us with an instance of success, after the membrane has been thrown up.

1610. As in the third stage, the obstruction is purely mechanical, so far as we know; and as that consists of a membranous production, but feebly attached to the side of the trachea, (1562) as fresh lymph is, most probably, constantly pouring out, to weaken its adhesion, it would seem that, that remedy which would give the most sudden shock to the respiratory organs, would give the fairest chance to remove it—hence, the utility of pretty powerful emetics at this period.

1611. In this, all practitioners seem to agree; but there is

* "I shall here notice those (remedies) only, which have been found decidedly beneficial. Of this kind are emetics, repeated daily, or even twice a day. They evidently accelerate the separation of the adventitious membrane, and favour its expulsion. However valuable this treatment may be, and I have myself obtained cures which I could attribute to it alone, it is no doubt too true that the greater number of cases still prove fatal."—*Laennec*, p. 126.

some variety of opinion, on the proper substance for this purpose. In Europe, saline, or antimonial emetics are considered best; in this country the polygala seneca in very strong decoction is preferred; and, we believe, with propriety. At least, the only instance we have witnessed of the expulsion of the membrane, was produced by a very strong decoction of this root.* We would, therefore, rely on it with more confidence than any other of the emetic substances.

1612. This medicine is, however, apt to run off by the bowels when exhibited thus strong; should this be the case, a quantity of laudanum sufficient merely to restrain its purgative effects, should be given from time to time. Two or three drops every two or three hours, will generally be found sufficient for this purpose.

1613. We have but very little confidence in any other remedies in this stage of the disease; especially, any that can fulfil the second indication, unless emetics do. The sulphate of copper has been much praised in this disease, and is by some supposed to possess much advantage over the antimonial preparations; but in this commendation our own experience, will not justify a preference: we have employed it several times, and under circumstances we deemed fair for its use, but without any advantage that we have not seen produced by the tartrate of antimony. We have never seen calomel, blisters, or warm bath, do the least good at this period: indeed, the painful remedies should now, we think, be withheld, (if we except the more powerful rubefacients,) since they hold out so little promise of success. We thought we saw evident relief in a late case, from the spirit of turpentine.† Twenty drops were given every hour: it seemed to relieve much, but the patient died.

* Take half an ounce of powdered seneca, pour on it half a pint of boiling water, and let it simmer until nearly half reduced; strain it carefully, and give a tea-spoonful every fifteen or twenty minutes, until it puke. This quantity will answer for a child from one to three years old—for one of greater age, two tea-spoonsful at a time may be given; but, we believe, the decoction should never be weaker than the above.

† What might be the effects of this medicine, if boldly pushed, in the congestive stage of croup, we have yet to learn; we think, however, it deserves a trial, as its influence upon the mucous membrane seems to be undisputed. We shall certainly urge it the first fair opportunity we have the misfortune to contend with.

1614. As a last resource, tracheotomy has been proposed with confidence: but it has been but too often performed without success. Nor is this to surprise us; since by the operation *nothing more* can be expected, than has resulted from the spontaneous discharge of the membrane; and we have already said, (1607) that this is but rarely followed by permanent relief.

1615. In our opinion, the operation has been proposed with more intrepidity, than discretion; for until we can prevent new accumulations after the removal of the previous ones, we need promise ourselves but little success from this scheme. It has been said, that the failure from this operation has been principally owing to its being performed too late, and hence it has been advised early in the disease. But who would promise himself, that he had saved life by this operation, should the patient even live, since if it be performed early, other remedies might have succeeded as well? And when performed late, who has witnessed its success? Therefore, in the early stage of the disease, the operation is certainly not called for, nor would it be proper to have recourse to it, since the disease is very often relieved without it; and in the latter, we believe it has ever been unavailing.

1616. We have seen it performed twice without success, where the operation, simply considered, had every advantage which sound judgment, and consummate skill could give it—for Dr. Physick was the operator. And we believe we do not venture too much when we say, he has no confidence in it. Dr. Cheyne employs some most convincing arguments against this operation; to which, we with much pleasure refer those who may wish to investigate this subject farther.

1617. But notwithstanding the unmanageable character of this disease, when its first stages have been neglected, or feebly treated, we have the experience of some of the most respectable practitioners, as well as our own, that when early attacked by proper means, there are few diseases of equal violence so entirely under the control of medicine.

CHAPTER XXXIII.

OF WORMS.

1618. There are few parts of the human, or even of the brute body, which may not be infested with worms, if any reliance can be placed upon the observations of philosophers and physicians. But our present purpose is only with such as infest the stomach, and bowels of children.

1619. It would seem to be agreeable to all observation, that children are seldom without more or less of these animals; indeed, so common are they in the human bowels, that Dr. Butter has attempted to sustain a most extraordinary thesis upon the subject. He declares them to be “nature’s remedy for destroying the superabounding morbid humours: and to stimulate the first passages, by their crawling motions, and thereby assisting the peristaltic motion of the guts to carry off what remains of the offensive load.

1620. As a general rule, we believe it entitled to confidence, that children altogether confined to their mother’s milk, never have worms. This is, so be sure, contradicted by M. de Lille, who affirms, that worms were expelled from his daughter, who was only eleven months old, and who was altogether confined to the breast. As regards our own testimony, we declare, we have never seen worms in children under ten months old; and only two instances of that age: both of these children were weaned at four months.

1621. From this, it would seem there is a protection against these animals in the mother’s milk, so long as the child is exclusively confined to it; but the moment it leaves it, becomes obnoxious to them. It is pretty evident then, that these animals are introduced into the stomach and bowels from without, by means of the various articles of food upon which the child lives.

1622. Hence, children who live much upon crude aliment, are more obnoxious to worms than those who are provided with a constant supply of wholesome, and nutritious articles of diet. And also, that those whose powers of digestion are strong, are seldom troubled with these vermin. In feeble, or dyspeptic stomachs, these animals are not only much more common, but also,

much more mischievous; since, from the imperfect condition of the gastric powers, the secretions permit them to remain uninjured by its influence; and, also, that in feeble constitutions, the secretions from the bowels themselves, are never so freely or entirely thrown off, as in robust frames; and being retained, offer a *nidus* at least for the engendering of these vermin: therefore, the best security against these animals, is a healthy condition of the stomach and bowels, and a nutritious and invigorating diet.

1623. Children who have access to crude unripe fruits, and who do not restrain their appetites from indulging in them, are particularly liable to suffer from worms; and this for two reasons: 1st, because, the ova of many are introduced by the food itself;* and, 2dly, because the weakened powers of the stomach permit them to be hatched, from the want of force in the gastric liquor; for we have every reason to believe, that few animals can resist its influence, when in a state of perfect health.

1624. And upon the same principle, it can be readily understood, how they can multiply and thrive, after they once have possession of the stomach and bowels; especially, as it is well known, they reside in the mucous secretion of these parts; and how to the parts themselves they may become irritants, and force them to a more abundant secretion; and hence, from a profuse supply of rich nourishment, they seem to thrive almost beyond their natures, and can scarcely be recognised as specimens of the class to which they belong.

1625. Almost every writer on the practice of ⁴physic, mentions extraordinary examples of the kind; and both foreign and domestic journals furnishes like instances. And it would seem to be a matter placed now beyond dispute, that many aquatic animals may gain possession of the stomach, either in the form of

* We are aware that the idea of the ova of worms being introduced into the stomach by fruit, and hatched there, is not believed by some, and even ridiculed by others; because, say they, there is no similarity between the worms expelled from the body, and the worms found in unripe or injured fruit—but this is taking but a limited view of the subject; since, it is certain, that very considerable varieties have been observed to pass *per anum*, and many doubtless, have escaped unnoticed. Besides, the difference in nourishment, and even, perhaps, a change of habits may alter the form of these animals: the leech, it would seem, undergoes a great change when introduced into the bowels and permitted to revel there, as we shall notice below.

ova, or in a viviparous state. Thus, the horse-hair worm, though an aquatic animal, is frequently found in the stomachs of the peasantry of Lapland, and introduced there, agreeably to Linnæus, by drinking of the half putrid water of their ponds.

1626. After the same manner, the leech has been conveyed into the stomach when minute and young, along with the muddy and stagnant water they are known to inhabit. Of this kind is the remarkable case related by Mr. Paisley, in Vol. II. Art. xxvi. of the *Ed. Med. Essays*. And also of an analogous kind, is that related by the late Dr. Bond of this city, in the *Lond. Med. Observ. and Inq.* Vol. I. p. 68. In the first of these instances a gentleman voided two animals of the leech kind, each measuring a foot and a half in length, and an inch and a half in diameter. In the second, a worm of twenty inches in length, was voided by a woman, after great suffering, and of which she died. On opening the body, it was found that the animal had worked its way into the liver through the common duct, and committed great havoc on that organ; after which it seemed to have travelled back, and had forced its way again with much difficulty through the same duct into the intestines, whence it was discharged dead, and in two portions.

1627. It is in vain to urge that these animals cannot be introduced from without into the human system, as the aliment and mode of life must not only be different, but their habits must also be destroyed, in a place of such confinement—the facts speak for themselves.

1628. It is true, the cases just mentioned are exceptions to the general inhabitants of the stomach and intestines; yet, perhaps, there is nothing more marvellous in the one instance than in the other; since we cannot admit, with our present data, that there are varieties of worms, proper to the human stomach and bowels. If they are extraneous, as we believe them to be, it only follows, that the kind usually found, are much greater in number; more easily introduced, or of more hardy habits; resisting and overcoming the disadvantages of their new situation, and eventually thriving and revelling in the plenty of their adopted habitation.

1629. The worms commonly found in the human body, are divided into the “round,” and the “flat.” These are arranged according to the disease or symptoms to which they give rise: 1st, those which can be nourished in any portion of the alimen-

tary canal; 2dly, those which locate themselves at the lower extremity of the canal; 3dly, those which have no "local habitation," and seem to have wandered there erroneously: hence, they are divided into three species, and called,

1. Alvine worms, or *Helminthia Alvi*.
2. Anal worms, or ————— *Podicis*.
3. Erratic worms, or ————— *Erratica*.

Species 1. Of Alvine Worms.

1630. "Worms existing and finding a proper nidus in the stomach or alvine canal, chiefly of children, and sickly adults; producing emaciation, a swelled hard belly, gnawing or pungent pain in the stomach, pale countenance, fetid breath, and irritation of the nostrils." (Good, Vol. I. p. 200.)

1631. The worms which give rise to the above symptoms, and inhabit the regions designated, are ranged under the following varieties:—

A—Long round worm, or *Ascaris Lumbricoides*.*

B—Long thread worm, or *Tricocephalus*.†

C—Long tape worm, or *Tænia Solium*.‡

* "The head of the long round worm is slightly incurved, with a transverse contraction beneath it; mouth triangular; body transparent, light yellow, with a faint line down the side; gregarious, and vivacious; from six to fifteen inches long; inhabits principally the ileum, but sometimes ascends into the stomach, and creeps out of the mouth and nostrils; occasionally travels to the rectum, and passes away at the anus." (Good, Vol. I. p. 200.)

† "The body of the long thread worm is, above, slightly crenate; beneath, smooth, finely striated on the fore part; the head obtuse, and furnished with a slender retractile proboscis; tail, or thinner part, twice as long as the thicker, terminating in a fine hair-like point, about two inches long: in colour, resembles the preceding; gregarious, and found chiefly in the intestines of sickly children; generally in the cæcum. (Ibid. p. 201.)

‡ "In the long tape worm, the articulations are long and narrow, with marginal pores, by which it attaches itself to the intestines one on each joint, generally alternate; ovaries arborescent; head with a terminal mouth, surrounded with two rows of radiate hooks, or holders; and a little below, on the flattened surface, four tuberculate orifices or suckers, two on each side; from thirty to forty feet long, and has been found sixty. Inhabits the intestines of mankind, generally at the upper part, where it feeds on the chyle and juices already animalized. Is sometimes solitary, but commonly in considerable numbers; and adheres so firmly to the intestines, that it is removed with great difficulty. It is said to have the power of reproducing parts which have been broken off; but this assertion wants

- D—Broad tape worm, or *Tænia Vulgaris*.*
 E—Fluke, or *Fasciola*.†

1632. As it is not necessary to our purpose, we have not given a long technical description of each of these varieties, nor shall we of the succeeding ones. We have mentioned them, because they are more or less frequently met with in practice. It may, however, be well to observe, that the first of these is found much more constantly than either of the other varieties—we would not, however, pretend to say in what proportion.

Species II. Anal Worms, or Helminthia Podicis.

1633. “Worms, or the larves of insects, existing and finding a proper nidus within the verge of the anus, exciting a troublesome local irritation, sometimes accompanied by tumour, frequently preventing sleep, and producing pain or faintness in the stomach.” (Good, Vol. I. p. 203.)

1634. Under this species are included the following varieties:

- | | | |
|-----------------|---|-----------------------------------|
| A—Thread worm, | } | or <i>Ascaris Vermicularis</i> .‡ |
| Maw worm | | |
| B—Beetle Grubs, | | or <i>Scarabæus</i> .§ |
| C—Bots, | | or <i>Æstrus</i> . |

proof. The animal is oviparous, and discharges its numerous eggs from the apertures on the joints. The broken off joints have, when discharged, the appearance of gourd seeds: and it is hence denominated gourd worm by many medical writers; and is the lumbricus *cucurbitinus* of Dr. Heberden.” (Ibid. p. 201.)

* “The articulations of the broad tape worm are short and broad, with a pore in the centre of each joint, and stellate ovaries round them; body broader in the middle, and tapering towards both ends; head resembling the last; inhabits the upper part of the intestines, and feeds on the chyle; from three to fifteen feet long; usually in families of three or four.” (Ibid. p. 202.)

† “The body of the fluke is flattish, with an aperture or pore at the head, and generally another beneath; intestines flexuous: ovaries lateral; hermaphrodite, and oviparous.” (Ibid. p. 202.)

‡ “The head of the thread worm is subulate nodose, and divided into three vesicles, in the middle of which it receives nourishment; skin at the sides of the body finely crenate or wrinkled; tail finely tapering, and terminating in a point; gregarious; viviparous; about half an inch long; sometimes wanders into the intestines, and occasionally as high as the stomach.” (Good, Vol. I. p. 203.)

§ “This variety has not been accurately described:” “the following seem to be the chief: gray larve, with yellowish legs, and ferruginous head;” “have six feet; are annulate, hairy, vesicular at the end of the abdomen, and furnished with a horny head.” (Ibid. p. 204.)

|| “The larves of the æstrus, breeze, or gad-fly, are called bots, and are of a

Species III. Erratic Worms, or Helminthia Erratica.

1635. "Worms, or the larves of insects, introduced by accident, and without finding a proper habitation in the stomach or intestines; producing spasmodic colic, with severe gripings; and occasionally, vomiting, or dejection of blood." (Good, Vol. I. p. 205.)

1636. Of these worms, according to Dr. Good, but little is known, though there is good authority for introducing them—and we have been the more readily induced to follow him in this particular, as we met with two distinct species, as we are disposed to believe, in the same child, within a few days, and altogether different from any we have hitherto seen.

Of the Treatment.

1637. We are but imperfectly instructed upon this point, and, perhaps, will remain so, until practitioners shall be better able to ascertain the effect of remedies on each individual species of these animals, and shall learn to distinguish them by the symptoms they give rise to. The whole of the symptoms which these vermin create, are familiarly said to be produced by "worms;" and it is probable they do not yield the same variety in effect, as their diversity of species would lead us to suppose. Nor is this, perhaps, much to be wondered at, since the whole train of symptoms to which they give rise, is produced by an irritation imposed on some one portion of the alimentary canal or stomach; and it would require greater powers of discrimination than is generally possessed, to detect the cause, or the particular nature of the irritant. So general, and so uniform, for the most part, are the symptoms arising from almost any irritation of the bowels, that one cause may readily be mistaken for another: thus, we have frequently seen all the symptoms usually attendant upon worms, completely simulated by the presence of acrid bile; and the reverse. Therefore, so far are we from being able to detect the species of worms, that we cannot say with perfect confidence that the symptoms are the result of even the genus; since, as we have just observed, other irritants may produce similar phenomena.

round figure; pale green; tail obtusely truncated; head tapering; mouth horny, with two lips, and two recurved black claws on each side of the mouth." (Ibid. p. 204.)

1638. Yet it is but reasonable to conjecture, that each species may have its antipathies and even its poisons; and this would seem to be strengthened by what is observed with some other of the inferior animals, in the selection and rejection of certain articles, which may in their turn be food or poison, as it may be one species, or another, that employs them. Thus, the deer eats with impunity the deadly laurel; while the sheep is instantly destroyed by it, &c.

1639. May not this diversity in what shall consist a wholesome nutriment, or in what may constitute a poison, help us to account for the extravagant encomiums bestowed by some upon an article, as anthelmintic; and the disparaging accounts of the same article, for the same purpose, by others? It is not probable that the success of the article, when it proved useful, depended upon its being obnoxious to one species of worms; and its want of success, to its not proving so to others? Is this not rendered still more likely from the fact, that that which shall detach and expel from the bowels lumbrici, shall not stir the *tænia solium*?

1640. We believe this to be more than conjecture—and it would be well for practitioners, to record, with each successful treatment of worms, the particular species, nay, if possible, the variety of this animal; the precise nature of the agent employed, and the particular situation of the patient at the moment; to record any auxiliary remedies, if such there were; and to note down any and every circumstance, that in his opinion may have given efficacy to the plan which had been adopted.

1641. We have observed, (1637) that the presence of any species or variety of worm, gives the same kind of disturbance to the system; and that at the present moment we cannot detect by any peculiarity of symptoms, by what species the mischief is created. Dr. Heberden has laid down the marks by which worms may be suspected, (for it amounts to nothing more) in the following order:—

1642. “The evils which hence arise, and which cease upon their expulsion, are headaches, vertigo, torpor, disturbed dreams, sleep broken off by fright and screaming, convulsions, feverishness, thirst, pallid hue, bad taste in the mouth, offensive breath, cough, difficult breathing, itching of the nostrils, pain in the stomach, nausea, squeamishness, voracity, leanness, tenesmus, itching at the anus toward night, at length, dejection of films and

mucus. The broad tape worms produce the severest mischief on the body; while the terrestres and ascarides, (round and thread worms,) sometimes lurk, scarcely suspected, unless there be an itching of the anus, or they are traced in the fæces:—

1643. Yet what practitioner with all this long list of formidable symptoms combining in one person, would risk his reputation upon the event, that they were produced by worms? It must be familiar to every body exercising the profession of medicine, to meet with cases, in which so many of the enumerated signs have combined, as to leave no doubt of the existence of worms; yet the issue of the case, has not always verified the conjecture; at least not by any direct evidence; such as the expulsion of these animals. While, on the other hand, he has seen them driven off in shoals, where a suspicion of the agency has scarcely been awakened.

1644. Dr. Heberden has failed to mention a symptom, which we believe was first noticed by Home; and which, when it exists, for it is not always present, is less equivocal than any other we have met with: namely, an cedematose swelling of the upper lip and lower part of the nose.

1645. Worms injure the body they inhabit, in one of three ways:—

1st. By irritation.

2dly. By destroying the nourishment intended for the support of the child.

3dly. By their bulk from accumulation.

1st. Irritation.

1646. When the stomach and bowels become irritated by the presence of worms, there is scarcely a part of the body which does not sympathize with it, and manifest its sympathy, by some marked derangement of the part. Thus, the lungs have assumed the appearance of consumption, by cough, hæmorrhage, &c.; the uterus has been urged to flooding; the brain to mania, coma, delirium; the nose to bleeding; the trachea to croup, &c. &c., if any reliance can be placed upon the observations of authors.

1647. The production of cough is familiar; that of simulated phthisis is more rare, yet met with. The uterus is but rarely, we believe, involved; not because it does not sympathize largely with

many parts after puberty, but because the affections under consideration are more common to early life, and, consequently, before this organ has received such development, as to render it a sympathizing part or source. The aberrations in the functions of the brain from this cause, almost every body has witnessed. A very remarkable instance of this kind fell under our notice lately, which it may be interesting to relate.

1648. The daughter of T. P. R. aged eleven, was suddenly attacked with fever and delirium. We were sent for, immediately, but being unwell, a friend visited her for us. She was ordered to lose six ounces of blood, and to be freely purged by calomel, &c. The following morning the delirium was increased; the fever equally high, though she had been liberally purged, and the blood had been drawn: the blood showed no marks of inflammation. She was ordered to lose six ounces more of blood; to take small but repeated doses of calomel. In the evening, every symptom was aggravated, or, rather, she was perfectly comatose, from which it was difficult to rouse her even to take drink; her tongue was very dark and dry, as far as could be ascertained by looking into the mouth, for she could not be roused sufficiently to make her put it out; the pulse small, wiery, and frequent; the skin cold, but dry; no urine; the eyes half closed; stools of a very dark brown colour, and extremely offensive, and passed involuntarily; in the last, while we were there, a lumbricus was found.

1649. The case appeared a forlorn one; but we did not abandon all hope: blisters, sinapisms and wine whey, together with an infusion of pink root, (the *spigelia Marylandica*,) were ordered for the night. On our visit, the next morning, seventeen lumbrici were shown us, that had passed a little while before. The patient, in every respect better; the coma much less; the skin warm, but not febrile; the pulse more open, and less frequent; passed urine freely; had command of her evacuations,

1650. The pink root tea ordered to be continued; no other medicine; wine whey to be withheld, and gum Arabic water substituted. On our visit in the evening, we found seven more worms had passed. The patient comparatively well—she rapidly recovered from this moment.

1651. In this case, it is evident the whole train of formidable symptoms were produced by some peculiar irritation in the

bowels from the presence of worms; whether this irritation arose from the motion of these animals upon the denuded bowels by a destruction of their proper mucus; or whether, from a deficient supply of nourishment, they inflicted any mechanical injury upon the bowels, may be very difficult to say; but we think it every way probable, that their brisk motion against the internal surface of the intestines, producing great irritation, or more or less inflammation of the mucous coat of the latter, may account for the extreme derangement of the system; especially, if they had suddenly migrated from one part of the intestinal canal to another.

1652. We have seen a number of instances where this change of abode has been made: and this, most probably, being suddenly performed, created prodigious disturbance in the system; and these cases are, perhaps, more frequent than is suspected. We can best illustrate this position by the relation of a case. M. M., aged between four and five years, was suddenly attacked by intense fever; face extremely red; skin burning hot; great thirst, with considerable nausea; great delirium; pulse bounding; together with a strong propensity to bite every thing presented to him, or even his bed-clothes. The child was one naturally of great vivacity; and, for his age, used a great deal of exercise, and had never, until that moment, shown any signs of indisposition, with the exception of fever from inoculated small-pox; (this was in 1790,) he had been, until almost the moment of attack, as cheerful and playful as usual. Living in the same house with him, and being at home, we were requested to see him, and we found him in the situation just described.

1653. From the suddenness of the attack, and the ferocity of the symptoms, and especially as this was an indulged child, we judged that his indisposition could only arise from some improper article introduced into the stomach, either in the form of food, or drink—from this view of the disease, we prescribed ten grains of ipecacuanha, which was instantly administered; and it was equally prompt in its effects: the very first effort brought from the stomach one, and the succeeding discharge, two more large lumbrici. These animals had hardly been ejected from the stomach, before the whole of the unpleasant symptoms vanished to return no more until twelve months after, when there was a repetition of all those just enumerated. The same plan

was pursued; and the same result followed. Another year produced a repetition in every respect like the two former; and the same sudden cessation of symptoms followed the use of the emetic. Since the above period, we have seen several other cases, in every respect analogous to the one above described: these cases give evidence, that the mere crawling of these animals over the surface of the stomach, may produce symptoms of the most violent kind, and render it extremely probable that the like may arise from a similar action on the tender surface of the intestines.

2. *By the Destruction of the proper Nourishment of the Child.*

1654. From the little we know of the habits of these animals; by their being almost constantly found to inhabit, or nestle in the mucous secretion of the bowels; by their never, so far as we recollect, being found attached to the coat of the intestines; from the certain emaciation which is sure, sooner or later, to follow their presence, it is every way presumable, that they feed, in part, if not altogether, upon the chyle intended for the support of the system. Therefore, the injury to the child, on this supposition, will in general be, in proportion to the number and size of these animals; hence the extreme attenuation of the body, from a large number of lumbrici, and from the tænia solium. Nor is this to be wondered at, when the former may be very numerous; or the latter, of almost incredible length.

1655. They may also contribute to emaciation in an indirect manner: 1st, by stimulating the mucous membrane to excessive action, and oblige it to pour out an unusual quantity of fluid, either for their comfort as a nidus, or for their support as a nourishment; 2dly, by diminishing the appetite, and thus preventing the common quantity of food from being taken; or, if there be appetite, it is generally of an inordinate kind; forcing the stomach to receive more than it can master, and consequently impair the powers of this organ; so that it will neither digest as much as ordinary, or properly elaborate that, which it reduces to chyme.

1656. It will be seen, that it will only be the "alvine, or erratic" worms, which can produce great emaciation; the anal, though creating great inconvenience, rarely produce emaciation; since, they do not appear to live upon any other than the stercal con-

tents of the bowels, therefore, cannot occasion any great waste of the natural fluids.

3. *By their Bulk from Accumulation.*

1657. Worms may do much injury by their bulk; for their numbers, as frequently happens with the *ascarius lumbricoides*, may become excessive. Of this we have seen numerous instances, and they must be familiar to every practitioner. One of the most remarkable cases of this kind which have fallen under our own notice, we shall relate. A poor woman living at the falls of Schuylkill, begged us, when near her house, to look at one of her children, which she represented as being almost in the last stage of human misery.

1658. The child, whom we now visited, was about twenty months old; it had had during the whole of the summer, (our visit to it was in September,) a diarrhœa, for which every known, and almost every unknown remedy, had been tried in vain, as regarded the relief of the child, though they abated the bowel complaint. The child had cut most of its teeth, and was still at the breast. It gradually wasted in its limbs and back, but its belly seemed to increase in a direct ratio to the emaciation of the other parts; it was literally nothing but skin and bones, with the exception of the belly, which was enormously distended and semi-transparent. It lay on its back, apparently without power to move from its position. It appeared in great and constant agony.

1659. Believing this to be a case of worms, we ordered half an ounce of pink root in infusion; this to be given in small portions, as frequently as it would be received. On our visiting the child the next day, we were presented with a sight that was truly appalling; ninety-six worms were shown us in a vessel; the shortest of which measured six inches, and the longest ten. Forty-five of these came away in one mass; the remainder at several different efforts. The child required no other medicine; nourishment soon restored its health.*

1660. Since worms may do injury in the several ways we have just pointed out, it becomes a matter of great consequence

* We are told that one hundred and eighty lumbrici, from six to ten inches each in length, were found in the jejunum and ileum of a child that died of scarlatina.—*Med. Chir. Rev. Nov. 15, Decem. 1823.*

to expel them as certainly, and as quickly as possible. For this purpose, an immense number of substances have been tried; some of which, indeed we may say by far the greatest proportion, have failed, though ranked under the head of anthelmintics by systematic writers. It would seem, from the long list of articles exhibited by authors, purporting to possess anthelmintic properties, that many of them must have acquired this distinction, from the mere contingency of these animals being expelled after their exhibition, without their having any direct agency in their extrusion; for, upon subsequent trials, they were not found to possess any such power. While, on the other hand, some few appear to be justly entitled to the reputation they have acquired among practitioners, of almost every nation. Of this kind we may mention, the Carolina pink root, (*Spigelia Marylandica*,) the Jerusalem oak, (*Chenopodium anthelminticum*,) the cabbage-tree bark, (*Geoffroya inermis*,) the cowage, (*Dolichos pruriens*,) the oil of turpentine, the male fern, (*Polypodium filix mas*,) calomel, and a few others.

1661. The whole of the anthelmintics may be classed under three general heads: 1st, those which seem to possess some specific action upon the constitutions of worms, by a narcotic or other power; 2dly, those which would appear to act upon their bodies, mechanically; 3dly, those which seem to prevent, either the development of their ova, in the oviparous kind; or act in an unfriendly manner upon the young of the viviparous, as soon as they are expelled from the matrices of the parents; or by merely restoring to the bowels and stomach their lost tone.

1662. Under the first division, may be reckoned the pink root, the Jerusalem bark, the cabbage tree bark, the male fern, the oil of turpentine, and perhaps calomel. Under the second, we may enumerate steel filings, tin filings, and the cowage. To the third belong, all the invigorating bitters, as tansy, rue, wormwood, gentian, &c. the chalybeates, and the muriate of soda, or common salt.

1663. We have already observed, (1637) that we are not in possession of the diagnostics of worms even as a genus, much less the species, if we except the expulsion of them: we are, therefore, obliged to prescribe for these vermin, pretty much at random, both as regards genus and species. In doing this, however, no serious mischief can arise; since, if the remedy be not

exactly suited to the species, it only ends in a failure, without doing any mischief, unless the anthelmintic plan has been injudiciously pursued, or too constantly persevered in.

1664. When we have reason to suspect worms to be the cause of the symptoms for which we are desired to prescribe, it is recommended by Dr. Good, to commence the course, by brisk purgative remedies, with a view to remove from the bowels a quantity of the mucus in which these animals are wont to burrow. We confess ourselves to have a high respect for the learning and talents of this gentleman, but at the same time, we must declare, it is a plan which has never succeeded in our hands; nay, it has for many years been our deliberate opinion that it even proves mischievous, by making these animals, if we may so express ourselves, cling more closely to the bowels, by some power or other, and thus disappoint the expectations of the practitioner. We, therefore, never premise a purgative, when about to assail these animals, but at once commence with the remedy we may select for trial, and persevere in it for a given time; when this direction has been complied with for a proper period, we then give a cathartic: this may be either calomel, castor oil, or an infusion of senna.

1665. The most decidedly efficacious remedy in our hands for the long round worm, *Ascaris lumbricoides*, (1631) is the pink root, in infusion; and we can most safely declare it has rarely failed where it has been faithfully administered. This remedy has to contend against much prejudice: it is declared, that the most violent, nay, deadly symptoms have followed its use—as convulsions, paralysis, vertigo, loss of sight, permanent head-ach, &c. If such symptoms arise, (and there can be no doubt that they have,) they can only have proceeded from over doses of this medicine:* and, if this be so, what medicine may not be chargeable with similar evils, from similar mismanagement?

* In almost every instance of which we could hear, with any certainty, of mischief following the use of the pink root, it was owing to over doses of this remedy—we, therefore, are very particular in prescribing the quantity to be given: for children, from one year to two, we give but two drams; for those from two to five, we order one-third of an ounce; from five to twelve, we give half an ounce; and, for adults, we never exceed six drams. We do not believe it safe to go beyond these doses; and we are certain, from often repeated trials, that these quantities are sufficient, whenever this plant is the proper remedy.

1666. We have prescribed this remedy many hundred times, and we declare, we have never, except in a single instance, witnessed any distressing symptoms to arise from it; in this exception, a slight squinting, with delirium, followed its exhibition: but even in this case, the evils were very evanescent, for they disappeared in the course of four or five hours. The mother of this child informed us, that this plant had uniformly produced the same symptoms in all her children. We are, therefore, of opinion, that there is no good ground for rejecting this medicine, upon the score of deleterious narcotic properties, whenever it shall be given in proper doses, and at proper periods.

1667. An objection of another kind, however, may with more success be urged against it; namely, its bulk. Some, with a view to diminish this, have given it in powder instead of infusion. We have repeatedly tried this medicine in this form, but find it does not lessen the difficulty. For a number of years past, we have succeeded entirely, by exhibiting it in coffee, to such children as may be in the habit of using this article of diet—but with such as do not, the difficulty stills remains. Might not an extract be made, and still retain the valuable properties of the plant?

1668. Our plan for its use is as follows: pour upon the proper quantity of the pink root, from half a pint to three gills of boiling coffee, and permit it to stand, closely covered, until it be sufficiently cool to drink. One half of this must be poured off, sweetened, and have milk or cream added to it: when thus prepared, the child is to drink it at its breakfast as if it were coffee alone; it may take with it bread and butter, &c., as in ordinary. The other half is to be given in the evening in the same manner, after warming it. This quantity is to be repeated for three days consecutively; and, on the fourth, it must be followed by a pretty brisk cathartic of calomel and jalap, castor oil, or senna tea. We can say with much confidence, that this plan rarely fails, unless the bowels are spontaneously opened, should there be worms of the kind just mentioned.

1669. Should, however, no worms appear, and the symptoms for which the pink root was prescribed continue, we are in the habit of giving the worm-seed oil, (ol. *Chenopod.*) in appropriate doses, provided there be no fever—should fever attend, this remedy must not be thought of: in such case, small doses of ca-

lomel appear to answer best; therefore, the pink root has a decided advantage over the chenopodium, since it may be exhibited with perfect safety even when fever is present.

1670. With young children who are not in the habit of using coffee, the worm-seed oil is of more easy exhibition than the pink root, and, on this account, may merit a preference, where the condition of the system will permit its use. The seed of the chenopodium is in familiar use in many places; and, it is said, with decided advantage—of this we cannot speak from our own experience. The seeds are reduced to powder, and made into an electuary with any syrup. Of this a child of two or three years old may take a table-spoonful morning and evening, abstaining for several hours from food. These doses must be repeated for several days, if necessary. These seeds are also given on bread and butter.

1671. Of the cabbage-tree bark, we can say nothing from experience; and of the cowage, we can say nothing favourable, as it failed in each of the few instances in which we tried it, though the pink root succeeded afterwards. Of the other mechanical remedies, we know nothing: the tin has been highly extolled, and may deserve a trial; but it would seem better calculated for the tape worm, for which it has been principally recommended.

1672. For ascarides, (1634,) the aloetic medicines are certainly the most useful. These worms produce more decided evidence of their presence, perhaps, than any other; since the troublesome itching at the anus, rarely arises from any other cause: besides, they can often be detected in the folds of the rectum by distending this part by pressing the nates from each other, so as to open the sphincter ani; as well as in the evacuations: especially after a costive stool.

1673. The attempt to dislodge these troublesome intruders, is not always as successful as could be wished, particularly when they are old inhabitants of the rectum. The plan we have hitherto found most certain, consists in the exhibition of small, and often repeated doses of aloes. The preparation we are in the habit of employing for this purpose, is the elixir proprietatis, in doses suited to the age of the patient.* After this has

* We give twenty drops of this medicine, morning, noon, and evening, in a

been given for some time, enemata of lime-water,* camphor,† or aloes,‡ should be had recourse to, which often destroys them altogether. When the itching is very troublesome, the lime-water injections relieve very decidedly, as does also a little tar-ointment, forced within the sphincter ani.

1674. We have no certain marks to distinguish tænia (1631) from other worms. From its immense length and peculiar habits, emaciation takes place more rapidly and extensively than in the other genera and species of worms. A gnawing sensation is often felt at the pit of the stomach, which nothing appeases but almost constant eating. The abdomen becomes tumid, and a sensation like something revolving in one portion of it, is sometimes experienced; more especially, in one of the sides. The head is often affected with pain or vertigo; and, in females, a train of most distressing nervous symptoms are produced: in one, we saw repeated attacks of convulsions, resembling epilepsy, assail the patient, from which she was not altogether relieved by the expulsion of the worm, which measured nearly seven yards. The complexion becomes sallow and wan; the eyes sunken, with widely dilated pupils. This worm, however, rarely attacks children; therefore, its treatment does not properly, belong to us—but for this we would make no apology, had we any thing new to offer upon the subject of its cure. The remedies on which the most reliance is at present placed, are the spirit of turpentine,§

little sweetened milk, to children from two to four years old; thirty, to those from five to seven; and, to adults, a tea-spoonful.

* Lime-water may be used, of its ordinary strength, every evening: from half a gill to a gill, (a little warmed,) will be sufficient. Dr. Darwall says, for the removal of ascarides vermiculares, or thread worm, “The most useful injection is composed of warm water and the tincture of the muriate of iron. Half a pint of the former, to half an ounce of the latter; and the whole of this thrown at once up the rectum. There are few cases so obstinate, that this will not suffice to overcome. It will be necessary to clear out the upper portion of the canal at the same time, by an active purgative.—*Plain Instructions for the Management of Infants*, &c. p. 99.

† From five to ten grains of finely powdered camphor, suspended in a wine-glassful of thin starch, may be given twice or thrice a week, at bed-time; or two or three tea-spoonsful of the camphorated spirit may be combined with the lime-water.

‡ An enema of a tea-spoonful or two of the elixir proprietatis, in a wine-glassful of warm milk, may be used two or three times a week at bed time.

§ We have, within a year, prescribed for a tape-worm, with great success, in a

the male fern, powdered tin, and the cowage. The worm expelled by the lady who became epileptic, was driven off by drinking every morning, for seven days, a pint of a saturated solution of common salt.*

1675. Some children are very much more disposed to generate these vermin, than others: so much so is this the case, in many instances, that they may be said to be almost always present. As the disposition to cherish these animals seems to consist in a weakened condition of the stomach and bowels, we always make it a rule, with such constitutions, to give tonic medicines, after these animals have been expelled, either in part, or altogether. The best with which we are acquainted, consists of equal parts of the carbonate of iron, and common salt; from ten to thirty grains, according to the age of the child, of this compound, must be given for twelve consecutive mornings. It is best exhibited in molasses; and should be taken early in the morning, fasting. A diet of animal food, chiefly, should be observed. Milk is also a very popular article of diet, at this time.

CHAPTER XXXIV.

OF SCARLATINA, OR SCARLET FEVER.

1676. This is so denominated, on account of the peculiarly florid appearance of the skin, by which it is accompanied. In some one of the several forms, which we shall presently see it

very athletic man, when in health, but who had become much reduced by this animal. He was ordered an ounce of castor oil, combined with as much of the spirit of turpentine, once a week, for three consecutive weeks. The medicine acted upon his bowels with great force each time it was taken; and, each time, brought away very large portions of the worm—nay, to the amount of many yards. Since writing the above, this patient called upon us, under the apprehension that all the worm was not discharged. He was again directed to use the same remedy, to which he readily assented.

* It would appear, that this worm is much more frequently met with in England than in this country; as Dr. Darwall, (Plain Instructions for the Management of Children, &c., p. 102,) says that his cases “exceed some hundreds.” Louis reports ten cases; and our own proper experience would not allow us to

puts on, this complaint has, from an early period, occupied no inconsiderable share of attention. It is frequent in its occurrence, extensive in its prevalence, and at times, exceedingly fatal in its terminations. The complaint prevails more in winter and spring, than in summer or autumn; attacking children, in preference to those who are more advanced in years.* By the nosological writers, it is divided into three forms, which are to be regarded, however, as nothing more than the same disease, marked by different degrees of violence:—the *scarlatina simplex*—*scarlatina anginosa*—and *scarlatina maligna*. To many, the latter is more familiar under the name of the *malignant*, or *putrid sore throat*.

1677. By *scarlatina simplex*, is to be understood, the simple constitutional disease, without any morbid affection of the throat. By *scarlatina anginosa*, a higher degree of the same complaint—the throat being at the same time inflamed and swollen. By *scarlatina maligna*, the same disease, in still greater violence—the throat being affected, or otherwise, and the symptoms malignant.

1678. It is unnecessary to enter into an elaborate discussion, to establish the identity of the disease.

1679. Like most other fevers, scarlatina commences with chilliness, fulness of the head, and lassitude; to which succeed, prostration of strength, which at times is very great; and nausea, or vomiting. The surface soon becomes florid, and hot; and on examining the throat, it will sometimes be found inflamed; and the same red appearance extends to the tongue.† There is often at this time, more or less catarrhal affection; the head suffers severe pain, particularly about the frontal sinuses; and with which is sometimes associated, a disturbance of the intellectual faculties. The degree of these symptoms, indicates with sufficient exactness, the strength and character of the forming disease. Being very slight, the complaint will be *simplex*; if less so, the *anginosa*; and where they are severe and threatening, the *maligna*.

say with certainty, that we have met with more than a dozen cases, in more than forty years of practice.

* Sir Gilbert Blane says, that he never saw a person turned of forty, affected by it.

† This last presents a very peculiar aspect. Through the fur with which it is covered, the elongated papillæ project their points, and are of an intensely deep scarlet blue.

1680. In the worst variety of scarlatina maligna, the commencing symptoms are alarmingly violent. The attack is, for the most part, sudden; the patient becomes pale, sick, and faint; the head is giddy, heavy, and confused, rather than severely pained; the oppression about the præcordia, is extreme; the heart palpitates; the stomach suffers great uneasiness, though there may be no vomiting—this organ being probably prostrated below the power of reaction. The face is pale, or livid; the eyes exhibit a glairy appearance, and are marked by a fatuitous or inebriated expression. “A remarkable tumefaction of the fingers sometimes takes place, which, with the erysipelatous tinge they soon acquire, is often of itself sufficient to characterize the disease.” Gregory. This is seen also in some mild cases.

1681. On the second or third day from the commencement of the disease, the febrile symptoms are considerable; the skin becomes morbidly sensible to the touch, and begins to be covered with an efflorescence, or florid eruption.* About the same time, a degree of redness and swelling appear in the fauces. The skin becomes excessively hot; more so, perhaps, than in any other form of febrile disease. The pulse is also very frequent, rarely being under one hundred and twenty strokes in a minute.

1682. The reaction of the system being now completely developed, the pulse exhibits the character which belongs to the existing form of the disease—preternaturally frequent, quick, and active, though still moderate, if the disease be *simple*—more frequent, irritated and tense, if it be *anginose*—of greater frequency still, but not so full, resisting, and firm, if it be *malignant*. The temperature of the body, the thirst, the scurf on the tongue, are also graduated in the same way; each symptom increasing in intensity, according to the augmented violence of the case.

1683. The eruption assumes, at times, the form of red points, though generally, that of red patches, which spread and unite, so as to cover the whole surface. It appears first on the face and neck; and in the course of a short time, spreads gradually to the lower extremities. The redness is often considerable about the loins, and the bendings of the joints, and on the hands and ends of the fingers, which feel stiff and swollen. The eruption is not

* The tone of colour is said to be that of a boiled lobster.

very regular, either as to the time of its appearance, its steadiness, or its duration. It usually continues about four days, and goes off with desquamation of the cuticle. As the disease proceeds, the neck and lower jaw grow stiff, the tonsils swell and become marked with specks, which degenerate into ulcers, covered with superficial, ash-coloured sloughs. These sloughs, in favourable cases, separate and come off, about the eighth or tenth day, when the ulcers underneath are fresh and florid, and heal kindly. The fever, at the same time, gradually abates, and a great amendment becomes apparent.

1684. But, in the more malignant cases, the course of the disease is very different. The sloughs on the tonsils grow fouler; and the discharge from them, and the nostrils becomes exceedingly acrid. The mouth assumes a dark colour, and is often incrustated with a black or brown fur. The breath is extremely offensive; a tenacious mucous secretion infests the fauces. The eyes and nostrils furnish an acrid serum. Hæmorrhages sometimes take place from these parts, as also from the bowels; diarrhœa of a severe kind is often found present; so also delirium or coma. If the throat be examined, it will be found studded with more or less sloughs, with dark or livid bases. The parotids are swelled and tender to the touch. Painful induration of the glands of the neck, which sometimes terminate in large suppurating abscesses; tenesmus, and diarrhœa; which sometimes speedily sink the patient, if not early removed.

1685. This is reputed to be a contagious disease. On this point, however, the evidence, to say the least, is equivocal. The facts connected with the spreading of scarlatina, seem to be perfectly explicable, on the ground of its being epidemic, and not contagious.* In this country the belief that it is a contagious disease, is by no means so general as it is in Europe, and especially as it is in Great Britain. I have never seen, so far, any decided proof, that it has communicated itself in any one instance.

On the contrary, I am strongly disposed to doubt its contagious

* The weight of European authority is perhaps against us; and in actual practice, it will be safest to act under such a conviction. We are, indeed, told, that the power of infecting endures for a very considerable time—certainly for a week or two after the cessation of the efflorescence, and probably as long as the desquamation of the cuticle lasts. Persons who have been exposed to the contagion, have the disease, it is said, to break out on the fifth or sixth day.

quality. I attended a child with scarlatina anginosa, in a family of eight children: the child that was ill was constantly surrounded by the well children, yet not one of these sickened afterwards with this disease. The same thing precisely occurred in my own family; besides many less remarkable instances. Gregory says, "The slowness of its diffusion is one of the most remarkable circumstances in its history." Vol. I. p. 237.

1686. As regards the prognosis, it is unfavourable in proportion to the malignant character of the disease. Thus, great prostration of strength; delirium; or coma; extreme restlessness; a distillation of very acrid sanies from the nose; a purple or livid appearance of the fauces, without tumefaction, interspersed with white specks, or dark sloughs, attended by diarrhœa of acrid matter; and above all, a change of the efflorescence to a mahogany colour, are mortal, or extremely alarming symptoms. The termination of this disease is sometimes exceedingly abrupt and unexpected. We have known death to take place, in several instances, and this most suddenly, where every hope was entertained of recovery,* but a short time before. The favourable signs in scarlet fever are, the patient surviving the ninth day, without any decided mortal symptoms; the intensity of the colour of the skin abating gradually; desquamation of the cuticle, and the departure of the swelling from every portion of the body to which it had extended; the separation of the sloughs, with a healthy appearance of the parts from which they separated; pulse becoming slower and less irritated; heat abating; urine depositing a lateritious sediment, refreshing sleep, and return of appetite.

1687. In its simple form, scarlet fever calls for very little medical aid. An emetic of ipecacuanha or antimony; purging with calomel, and afterwards with some one of the neutral salts; venesection, in case of fulness and pain in the head; the mild diaphoretics, aided by diluting drinks; and a regulated diet,† are all we

* When the disease is very malignant, death sometimes takes place on the third or fourth day; while, in its milder forms, it will linger on to the second, or even third week. Generally, however, the patient is safe after the ninth day, under either form of the disease.

† By a regulated diet, we mean a strict antiphlogistic one; that is, an entire forbearance from animal food; from every kind of liquor, whether fermented or distilled; and from spices of every species.

need prescribe. But in the anginose state of the disease, more is required—the treatment, here, must be circumspect and vigorous; and much reliance is to be placed on the thorough evacuation of the alimentary canal. Unless, as is sometimes the case, the violence of the symptoms calls for the immediate use of the lancet, let the treatment commence by puking with the ipecacuanha. Emetics are of the highest importance; and may sometimes be repeated during the course of the disease, should the symptoms be obstinate.

1688. The emetics should be followed by laxatives. Calomel would seem to be the most suitable, on account of its tendency to prevent, and remove congestions of the abdominal viscera, which are much to be dreaded, and vigilantly guarded against, in this disease. This is a disease in which congestions of the great viscera, are very apt to occur; and requires mercurial purging to unload the vessels, and restore the balance, which is thus destroyed in the circulation. In the more advanced stages of the disease, however, provided the bowels have been already fully evacuated, some of the milder purgatives may be employed. The best mode of exhibiting calomel is in divided doses—say, six or eight grains divided into six parts; one part to be given every hour, until the whole be taken; unless the previous quantity may have answered. Should this quantity, however fail to move the bowels, it must be followed by two or three tea-spoonsful of calcined magnesia, mixed in a little sweetened milk, and drinking after it some lemonade.

1689. In case the pulse be full, tense, or hard, immediate recourse is to be had to venesection. The quantity of blood drawn, and the repetitions of the operation, are to be directed, of course, by the judgment and experience of the practitioner. The relief felt by the patient, the appearance of the blood, and the effect on the pulse, must determine whether it shall be repeated—the bleeding must be followed by purging. In the early, or inflammatory condition of scarlatina, however, when there is considerable arterial action, and vast augmentation of heat on the surface, cold ablution, or sponging, gives great relief to the symptoms, and is a most comfortable process. We prefer, however, sponging to ablutions. Some, however, are afraid of these cold applications, because the throat is sore; but this forms no exception; for it is not accompanied by cough or other pneumo-

nic symptoms, like measles; and the sponging, or even effusion has checked the sore throat most evidently. We would, however, make an exception to the employment of cold water, &c., when they produce chilliness: in this case, tepid water may be substituted.

1690. We are told the warm bath is exceedingly efficacious, when the eruption imperfectly takes place, owing to general languor; and, especially, when attended by coldness of the surface—or, having appeared, suddenly recedes, inducing great gastric distress, and other very unpleasant symptoms—to cleanse the foul ulcers of the throat, emetics are found most effectual—the emetic may be followed by the use of detergent gargles; the best of which are composed of Peruvian bark, with a portion of the tincture of myrrh—or, barley water, acidulated with the sulphuric or muriatic acid, with the addition of honey. An infusion of Cayenne pepper, alone, or mixed with barley water, or the decoction of bark, is much, and we have reason to believe, not too much, praised as a gargle,* as far as we can rely on our own observations.

1691. In the malignant form of this disease, the general practice is nearly the same as in the preceding or anginose state. We rely, mainly, on evacuations of the primæ via—first, by emetics, and next with the mercurial purges.†

1692. Whatever may have been the primary form of the disease, in the advanced stages, when appearances of great depression supervene, we have recourse to nearly similar measures. The object is to support the enfeebled system, which is best accomplished by the carbonate of ammonia, camphor, turpentine, bark, and wine—aided by the ordinary external irritant applications.

1693. Long after the cessation of the active symptoms, there are certain consequences show themselves, to which our attention should be immediately called. Deafness is one of these: this proceeds from inflammation having invaded the Eustachian

* We are in the habit of using Cayenne pepper gargle in the incipient stages of anginose affections, with the most decided advantage; and, in the disease under consideration, it seems to us to be the only remedy that affords relief, if ulceration have not taken place.

† See American Journal of Medical Sciences, for August, 1833, for Dr. Jackson's account of the use of ice in this disease.

tube, and leaving it in a state of obstruction. It is an unpleasant affection, though we have never known any permanent mischief to result from it; it requires no treatment.* Œdematous swellings of the lower extremities are common, as well as more serious inconveniences. The best treatment is to purge moderately, and afterwards exhibit the digitalis. It is here, that this drug sometimes proves pre-eminently beneficial. But in the removal of the effusion, it may be aided by frictions and bandages, if the swelling be large, and by exercise duly regulated, and persevering in a milk and vegetable diet. We have known the inflamed parotids run on to extensive suppuration, and require much time for healing. When this takes place during the continuance of considerable fever, and the parts exposed by sloughing look as if they had been carefully and beautifully dissected, death has constantly followed, as far as our observations have extended.

1694. Dropsical affections frequently succeed to scarlet fever: this takes place after the mild, as well as after the severer form of this disease. We are inclined to believe, that this affection arises from the accompanying inflammation, not having been properly subdued by early depleting remedies. In consequence of this, the inflammation acquires a chronic, or a sub-acute form, which is only relieved by purging, by blood-letting, and diuretics of the saline kind; as nitre, or nitre and squills. For children under seven years, and above three, we would give eight grains of nitre, and one-fourth of a grain of squills three or four times a day. For those above seven to fifteen, twelve grains of nitre, and half a grain of squills may be given; from fifteen to adult age, from fifteen to twenty grains of nitre, and a grain of squills may be administered.

* Dr. Gregory, however, states, that "not unfrequently permanent deafness is left by it." Vol. I. p. 240. Of this, however, we have never seen an example.

CHAPTER XXXV.

OF MEASLES, OR RUBEOLA.

1695. This disease occurs, for the most part, in the winter and in spring; at least, its appearance is much more frequent at these periods than at other portions of the year. It may, however, prove epidemic in the summer. This disease is evidently influenced by the state of the weather; it is more moderate in mild, than in severe weather.

1696. It is the opinion of some, that measles is regular in its recurrence as an epidemic; the interval is said to be seven years. Whether this be rigidly the case, we are not prepared from present data to decide; it is, however, rendered probable, that there is either a regular return at this period, or, at least, an approximation to it.

1697. It is said to be contagious; but this may be pretty fairly disputed, notwithstanding the imposing experiments of Dr. Home. This physician declared he had propagated this disease by inoculation. An Italian physician, (Speranza,) declares he has succeeded in an attempt at inoculation by puncturing a full measles with a lancet, and inserting the blood that was yielded by the puncture—he declares he was successful in six cases. On the other hand, Dr. Chapman (MS. lectures,) says upon this point, that “experiments of this nature were instituted in the practice of our Dispensary in 1801; in which the blood, the tears, the mucus of the nostrils, and bronchia, the eruptive matter in the cuticle, properly moistened, were all tried, and without success in any one instance.”

1698. Neither is it settled, whether the constitution can be made to suffer the rubeolus action a second time; evidence is so entirely contradictory on this point, that it would not be safe to draw a positive conclusion either in favour or against it. One thing, however, we may safely declare; that if it be taken a second time, it is contrary to the ordinary character of this disease;*

* There is a variety of this disease, however, which affords no protection against the genuine measles; this is called the French measles, or the rubeola sine

or, in other words, it is but an exception to the general rule, as regards several of the diseases which propagate themselves by specific contagion, as small-pox, cow-pox, whooping cough, chicken-pox, &c. For it is now well ascertained, that exceptions do occur—we have ourselves known each of the diseases just enumerated, repeated seemingly so unequivocally as to leave no doubts in our mind upon the subject.

1699. The measles are ushered in like other febrile affections, by chilliness, languor, oppression, heat, and thirst, especially the first day: these terminate in a perfectly well-formed fever, and sometimes by sickness, and even vomiting. The fever is pretty high from its first assault, but not regularly so; occasionally it would seem to augment for two or three days together, and becomes very considerable at the time the eruption makes its appearance; which, usually, is not before the fourth day.

1700. Cough, a little hoarseness, slight sore throat, pain in the chest, and difficulty of breathing, are the usual attendants upon this disease. The eyes are particularly affected; they are almost always slightly inflamed, and the lids a little swelled; and these are attended by a plentiful secretion of scalding tears. Sydenham looks upon these symptoms as the most certain marks of the approach of the measles. The discharge from the nostrils is also abundant, as well as acrid, sometimes. Sneezing is almost a never failing attendant upon this complaint.

1701. The eruption almost always occupies the face and neck before it is observed elsewhere: it, however, for the most part, spreads itself successively over the whole body. But should this not strictly occur, and the eruption show itself in “large red spots, not rising above the surface,” it may, nevertheless, be a genuine measles.* This eruption is mostly very florid, and it retains this colour for the first three or four days, after which time it becomes brownish, and then gradually vanishes: this is followed by a desquamation of the cuticle. “These red spots are composed,” agreeably to the same author, “of small red pimples, seated near each other, and rising a little higher than the

catarrho. Dr. Gregory says this “is a very rare variety, and only interesting in a pathological point of view.” We have had several opportunities to see this form of measles. Dr. Hosack witnessed it in 1813 in New York. It has never required any active treatment so far as we have observed.

* Sydenham, Vol. I. p. 257.

surface of the skin, so that they may be felt upon pressing them lightly with the finger, though they can scarcely be seen.*

1702. The eruption does not much abate the severity of the fever; at least the heat of the skin remains equally great, and especially that of the head and neck, both of which have a look of greater fulness than is natural. Sometimes, however, an abatement of fever may be observed after the completion of the eruption; but, for the most part, it does not entirely cease until the cuticle is cast off. The vomiting which usually accompanies, or ushers in the disease, always ceases at this period; but the fever and cough seem rather to augment, and is very frequently accompanied with drowsiness.

1703. We have said cough was an attendant upon this complaint; indeed, it may be said to be of never failing occurrence. It is in the commencement dry, frequent, and sometimes painful; but as the fever declines, it becomes more open, and oftentimes the expectoration is even great.

1704. Pneumonic symptoms very frequently attend measles; and sometimes this disease, when epidemic, is characterized by this tendency. We remember it to have been epidemic, early in the spring of 1785 or 1786—at which time almost every case was marked by pneumonic symptoms of greater, or less violence. This disease was of difficult management; it ran its course with unusual rapidity; and not unfrequently terminated in death; and in all instances almost, the cough was severe, obstinate, and of very long duration. Indeed, in many cases, it yielded but to the genial heat of advancing spring, or even that of summer.

1705. The only disease with which measles can well be confounded is scarlatina; yet it is pretty easily distinguished from it by attending to the characters of each. The sneezing, the watery eyes, the severe cough, the pneumonic tendency, all serve to distinguish the measles from scarlatina. Besides, in measles, there is less swelling in the skin; the redness is not so uniform, nor is the tone of colour precisely the same. For in scarlatina, the tone of colour on the skin is much more vivid than in measles, and seems to lay beneath the cuticle—it is truly a scarlet colour. In measles, the eruption has a mixture of the Modena with the scarlet—that is, it has a shade of purple. Besides,

* Sydenham, Vol. I. p. 257.

in measles there is a little roughness to be perceived if the hand be slowly passed over the skin that is occupied by the eruption; which is not the case generally, indeed very rarely, with scarlatina.

1706. In measles the eyes are much more sensible to light, and are very much more tearful, than in scarlatina; nor are the fauces so much affected in the former, as in the latter disease. Indeed, we have seen many cases of genuine measles without the throat being at all affected, which rarely happens with scarlatina. In measles, there is less certainty of a desquamation of the skin. In the former, it more resembles a branny scurf, than a true desquamation.

1707. As regards the prognosis, it may be observed, that this disease is dangerous in proportion as the head, the lungs, and the stomach may be affected. And in habits disposed to consumption, it is always bad; at least, it is always to be feared.

1708. Much fever without a corresponding quantity of eruption; or the latter making its appearance reluctantly, or of a pale or livid colour, is always a bad sign, and is usually attributed to a want of vigour in the constitution; but this is not so without exception; or, perhaps, it is very rarely the case. We shall again advert to this condition, presently.

1709. The abrupt disappearance of the eruption, or its becoming pale, is unfavourable; especially during the first day or two of the eruption; or, if it be attended by a severe vomiting, a great tenderness of the epigastrium, or a diarrhœa. Should none of these untoward symptoms take place, the case will most probably terminate propitiously. But we must be upon our guard not to mistake the ordinary progress of the disease, for a retrocession of the eruption. For, as the disease usually runs its course in eight or nine days, the eruption is observed to disappear pretty generally at this time, which by the ignorant is supposed to have taken place much too soon, and with a view to maintain it upon the skin, stimulating drinks and medicine are freely exhibited; the patient is covered warm from head to foot, and every avenue for air carefully shut up. In consequence of such treatment, the patient is thrown suddenly into imminent danger—fever is rekindled; cough and other pneumonic symptoms increase; and the eruption assumes a livid or black hue, and, if not soon relieved by proper treatment, the patient quickly dies

1710. Measles seems to be more decidedly attended by that condition of the system called inflammatory, than almost any other of the eruptive diseases; or, in other words, its epidemic character is more frequently inflammatory than otherwise. There are exceptions, of course, imposed by constitution, and season of the year; but, above all, by the epidemic peculiarity of the atmosphere: hence, it is sometimes highly inflammatory; requiring the most active evacuations, and extensive depletion by blood-letting, &c., to keep it in control. While, again, it may have a highly malignant character; for the relief of which, we must have recourse to the opposite means. Sydenham, however, did not order bleeding in the beginning, nor even at the height of this affection, though so fond of this remedy, under almost every circumstance, at other periods of the disease. This, in our opinion, shows how discriminating this great man was—for he would not prescribe for the name of a disease: the epidemic of 1670 does not appear to have been highly inflammatory, as a strict anti-phlogistic regimen, with demulcents, he informs us, “seldom failed to cure the disease.”

1711. Therefore, regard must be had to the character the measles assume, and must be treated accordingly—if fever be high, cough and oppression severe, blood should be drawn immediately, though these symptoms occur at rather an uncommon period of the disease, namely, in its forming stage. For such changes may be imposed upon the character of measles by some constitution of the air, or other cause, as to render this operation occasionally necessary. •

1712. From this view of the constitutional differences of measles, it will at once appear, that its treatment must vary according to its specific character; or its form may be so mild as to require no medical treatment. We have not been under the necessity of bleeding but once this season, for this disease, though we have prescribed for more than one hundred, up to this time; (April, 1829,) so mild has the character of measles been.

1713. In attacks of severity, especially where much cough, oppression, or pain in the chest attend, the first remedy we can profitably use is blood-letting; the quantity must be regulated by the age of the patient, the force of disease, and the immediate effect of the remedy. It must, however, be remarked, that in measles, though we are obliged to repeat this operation, it rarely

requires large quantities to be drawn at a time: and the repetition must be governed by the state of the pulse, and continuance of the violent symptoms.

1714. Much objection is made to bleeding in the measles by some: this fear is without foundation in most cases of this complaint; for, as a general rule, we may declare, that there are few diseases which more decidedly require this remedy; as there are few in which the lungs are so seriously implicated. Under the best management, it is but too apt to leave a troublesome, and obstinate cough behind; but this is sure to be augmented, if blood-letting has been neglected where the case required it; and we may most safely add, that this but too frequently happens; since this operation is too often proscribed.

1715. It is true, if we are to believe authors, that now and then, the character of this epidemic is such, as to *forbid*, in almost every case, blood-letting; but this is but the exception to the rule. And we are disposed to believe, that these exceptions in many instances have been imaginary; or rather, that the true mode of treatment has been ill understood. Sydenham appears to us to be authority for this belief; for we are of opinion that few would have bled under the circumstances, which he declares he found the maid servant of "Lady Anne Barrington, who had the measles, joined with fever, difficulty of breathing, *purple spots over the whole body*, and many other dangerous symptoms; all of which," says he, "I ascribed to the hot regimen and medicines which had been too freely used. I directed bleeding in the arm, and prescribed a cooling pectoral ptisan to be taken often; by means of which, and a more cooling regimen, the purple spots, and all the other symptoms went off by degrees," p. 264, Vol. I. There are few diseases which put on a menacing appearance, that are worse treated than measles; especially, when the eruption is about to make its appearance. Should this fail to be as rapid in its progress, or as extensive in its diffusion, as meets the views of some old woman, or ignorant nurse, the disease is almost sure to be converted by stimulating applications, into one of danger, however simple it might have proved, had its course and tendency been undisturbed. With a view to promote an eruption, heating teas of various kinds, and even liquors are given, to the certain injury, if not to the absolute destruction of the patient—this conduct cannot be too strongly reprobated, or too peremptorily forbidden.

1716. The same error is committed almost always, where the eruption seems tardy, or reluctant in its appearance; for it is wrongly imagined, that this can only proceed from a want of force in the system, and that the efforts of nature must be seconded by heating teas of various kinds, whine whey, milk-punch, &c., when nothing could have relieved the oppressed system but blood-letting, and other evacuating remedies; and hence, we are disposed to believe, this disease so frequently proves fatal. For if the pathology of the measles, now so generally assumed, be true, the cause of the eruption not appearing upon the skin, may be owing to the intensity of the gastric irritation or inflammation, as we have already attempted to explain, and which may require the loss of blood, either from the system at large, or from over the region of the stomach, by leeching, or cupping.

1717. In aid of the bleeding, we should employ calomel, so as to freely discharge the bowels, without urging them to brisk purging. And also to prescribe a strict antiphlogistic regimen; together with demulcent drinks, as flaxseed tea, barley water, bran tea, gum Arabic tea, &c. It may, also, become necessary, where the pneumonic symptoms continue after bleeding, to draw blood from near the seat of the local affection by cupping, and this to be followed by a blister.

1718. When the system is sufficiently reduced to bear opium in some form or other, it should be administered, so as to appease the cough, which but too often is very distressing.*

1719. One of the best forms of giving opium, is that of the “black drop,” or the acetated tincture of opium. This should be administered at night, in combination with antimonial wine, in suitable doses—for instance, a child from two to four years of

* We have found the following mixture answer admirably well:—

R.	Sperm. Ceti	℥iss.	Take	Of Spermaceti	1½ drams.
	Vitel Ovi.	j.		Yolk of an egg	one.
	Pulv. G. Arab.	℥ij.		Powdered gum Arab.	2 drams.
	Elix. Paregor.	℥vi.		Paregoric elixir	6 drams.
	Vin. Antim.	℥ss.		Antimonial Wine	4 drams.
	Sacch. Alb.	℥iij.		White Sugar	3 drams.
	Aq. Font.	℥vj.		Water	6 ounces.

M.

M.

Of this a table-spoonful is to be given every two or three hours, until the cough be relieved. This dose is calculated for an adult—for children the quantity must be proportional.

age may take three or four drops of the black drop, with ten of antimonial wine at bed time; and, should this not relieve the cough, and appease the inquietude, in two hours it may be repeated—for children more advanced, we must increase the dose a little. But a few trials of rather an under dose will soon lead to the knowledge of the required quantity.

1720. For children under two years old, we have found the syrup of poppies to answer admirably. This may not only be given at night, but also in the day, and may most advantageously be repeated, as the necessity arises; from a small tea, to a pap-spoonful, will be sufficient for a child from six months to two years old.

1721. Should the character of this disease be typhoid,* the lancet must be sparingly used, and, perhaps, not at all, except in the beginning; but when there is much oppression or pain in the chest, with much cough, cupping will be found both necessary and advantageous—this must, for the most part, be followed by blistering.

1722. Emetics are also useful in this species of measles, and should be employed where there is a great accumulation of phlegm, and the expectoration but inconsiderable. Mercurial purges are also to be given, even to plentiful purging. It is useful also sometimes to employ the warm bath, especially where the character of the eruption is not sufficiently healthy; looking either too pale, or livid, provided the pulse is not so active as to require bleeding.

1723. Should the appearance of exhaustion supervene, we must have recourse to the diffusible stimuli; as wine whey, and the volatile alkali: and these may be aided by blisters to the extremities, or by sinapisms to the soles of the feet.

1724. It is of much consequence throughout the whole course of this disease, that the temperature of the air of the patient's chamber should be regulated, and not made to exceed sixty-four or five; sixty, perhaps, would be the best standard. This temperature would be warmer than would be useful for small-pox—but measles requires this; but it is never proper to keep the patient hot, by either a heated atmosphere or bed-clothes. The

* We are of opinion that too much care cannot be taken, not to confound what is termed "a typhoid condition," with an existing inflammatory condition of the system: witness the case related by Sydenham, p. 489.

constant disposition to cough will readily explain, why measles requires a higher temperature than small-pox. Dr. Gregory observes, that "it is well ascertained that these, (the symptoms of thoracic inflammation,) are often aggravated by a free exposure of the body to cold, either during or previously to the eruption; and some have remarked, that this aggravation of the catarrhal symptoms is occasionally attended by a *recession* of the eruption. Moderate warmth, therefore, is on all accounts advisable in measles."

1725. Measles but too frequently leave disagreeable consequences behind them, especially cough. This secondary or supervening cough, is too often neglected, owing to the belief that more or less must necessarily follow this disease. This affection takes place after the patient has gone through the eruptive stage; and dissection reveals that it is owing to an inflammation having attacked the mucous membrane of the bronchia. This complaint comes on sometimes so insidiously, that it makes a fatal progress before danger is apprehended. We should, therefore, never trust to nature and time, a patient, in whom a considerable difficulty of breathing exists, accompanied by a wheezing. Nor must we be deceived, because the cough is not severe; for, in some of the worst cases, the cough is not always violent. The cough, for the most part, is dry and fatiguing, and comes on by paroxysms. The pulse is hard for the most part, and always frequent; thirst great; tongue loaded; bowels constipated, and a hot skin. This is a state of great danger; the bronchia are soon filled with mucus, and the patient dies from the failure of the due oxygenation of the blood. This complaint must be treated as an acute bronchitis. A deranged state of the bowels may also follow, particularly if the disease have been ill managed, by over stimulating, by exposure, or improper diet, too soon after the fever has passed away. On this account, a patient recovering from this disease, should never be exposed to cold or damp; and should be confined for some time to a milk and vegetable diet, and made to wear in cold or cool weather flannel next to the skin. Sydenham informs us, that the diarrhoea following measles has always been best relieved by blood-letting.*

* There is a curious circumstance mentioned by Dr. Tourtual, a Dutch physician, which, if proved to be a fact, will be highly interesting in the history and treatment of measles. He states, that at a period when measles were epidemic,

CHAPTER XXXVI.

OF URTICARIA, OR NETTLE RASH.

1726. This very troublesome, and oftentimes obstinate complaint, is wont to attack children who are teething, or who indulge much in ascescent food, or fruits, in the summer season especially. Dr. Good defines the idiopathic species to be—"Rash in florid, itching, nettle-sting weals; appearing about the second day; irregularly fading and reviving, or wandering from part to part: fever, a mild remittant." Vol. II. page 384.

1727. This definition may be correct in what Dr. Good calls the idiopathic form of urticaria; but there are some remarkable deviations from it. We have seen many instances of this complaint come on very suddenly, when certain substances have been taken into the stomach, and which was only relieved by such substances being again discharged from it. We know a gentleman in whom this complaint has been several times produced by eating of very young boiled chicken; (when roasted or broiled they would not affect him;) by boiled young cabbage in the spring of the year, and by a draught of cold lemonade when the body is overheated. After either of these substances is received into the stomach a few minutes, he becomes violently sick; will vomit, and in a moment be covered with weals, which will remain until he effectually cleanses his stomach of the offending matter. This affection is rarely idiopathic—at least, we have never seen such a state of the skin; though both Good and Plumbe make the distinction. Mr. Plumbe says, "Notwithstanding the very general origin of urticaria in temporary or accidental disorder of the system, it often occurs as an idiopathic affection, or, in other words, as a consequence merely of extraordinary irritability of the skin; and hence some persons can produce it with slight friction on any part of their body, even where no suspicion of the

all the children who were under treatment with sulphur for the itch, escaped the disease; and that those who were taking sulphur for the whooping cough enjoyed the same immunity. Also, he says, that many children who were taking a mixture of sulphur and camphor, and to whom these medicaments were applied by frictions, were not attacked by measles, while those who were not subjected to this medicine were affected." Amer. Jour. of Med. Scien. for May 1832,

slightest derangement of the function of any organ can be ascertained."—*Practical Treatise on the Diseases of the Skin*, p. 272.

1728. Dr. Hewson mentions several cases of eruptions which arose from taking of balsam copaiva: some resembled the weals of urticaria, others, erythema, or roseola. Strawberries sometimes give rise to urticaria; we know a lady who never fails to have it after eating of this fruit.

1729. This is a very troublesome complaint, in consequence of the excessive itching which always attends it. It is almost always accompanied by sickness of stomach, headach, giddiness, and great susceptibility to become chilly, upon the slightest exposure of any portion of the body. The fever which attends may be of greater or less violence, but almost always observing an evening exacerbation; at which time, all the symptoms are increased, and especially the itching. The weals which appear upon the skin are sometimes very extensively spread over the body; and at other, confined to certain portions of it, especially upon the inner surface of the fore arms, and inside of the thighs.

1730. From the surface of the weals there issues an acrid serum, or lymph, which serves to perpetuate, or renew the troublesome itching;* and such is the disposition of the skin, while labouring under this affection, that you may at pleasure, if the fever be considerable, produce a continued eruption, by drawing the nail forcibly over the skin, at almost any portion of it.

1731. This eruption sometimes disappears as suddenly as it had showed itself; and when this is the case, serious consequences have sometimes resulted, though this disease is but very rarely fatal. We but once have witnessed danger from the retrocession of the eruption. In this case, the patient had had previously several attacks of an intermittent, from which she had been relieved each time by the sulphate of quinine. Her health appeared to be rapidly mending for some time, and she had nearly acquired her wonted strength; when very early one morning she was attacked with urticaria, to which she had been occasionally liable.

1732. Soon after it had made its appearance, she became ex-

* Mr. Plumbe says, that a fluid readily escapes, if these weals be punctured by a sharp instrument. (P. 272.)

tremely sick, and vomited very freely: she complained of a severe pain in the head, which was quickly followed by delirium. At this time we saw her; besides the symptoms just named, we found her extremely restless, throwing herself into a variety of positions, as if unable to keep quiet for a moment. The face was cadaverous, and evinced much uneasiness; her intellect was not sufficiently collected to give us any rational answer to our questions. The extremities were cold, the pulse nearly extinct, and the breathing very laborious—in a word, her situation was truly alarming.

1733. Hot applications were made to the feet and legs; a very large sinapism was applied to the region of the stomach; and ten grains of the carbonate of ammonia were ordered every hour, together with a spoonful of hot brandy toddy every few minutes.

1734. The parts of the body from which the eruption had disappeared, exhibited a mottled livid hue; other portions of the skin were “goose-fleshed,” to a great degree. The bowels were spontaneously opened, at the time the puking took place, and she passed a large quantity of urine.

1735. We saw our patient after an interval of two hours, and found her in rather a more favourable situation, but very far from being relieved. The legs and feet were a little warmer, but the mustard had scarcely acted upon the skin. The volatile alkali and brandy toddy sat well on her stomach; the delirium somewhat abated, and the whole skin looked more natural. The remedies were ordered to be continued.

1736. At the end of two more hours, we again visited our patient; and now found her much amended—that is, the warmth of the body greater, and more natural; the delirium, and jactitation, less; the pulse more open; the countenance more natural, and less distressed, but no return of the eruption. Remedies were ordered to be continued.

1737. In the evening, upon our return, we found a pretty plentiful crop of the eruptive weals attended by much itching. The warmth of the skin rather above the natural standard; the delirium gone; the inquietude over. The volatile alkali and brandy were suspended; a liberal dose of magnesia ordered; and a little chicken water, from time to time was allowed.

1738. On our visit on the following morning, we found our

patient feeble, but relieved from the eruption, and free from fever. She was soon restored to health.*

1739. It would be difficult to say, what may be the cause of idiopathic urticaria: be this what it may, the force of the disease is chiefly spent upon the cutaneous system; but with which, the stomach is sure to sympathize: or the stomach may be the seat of the affection, and the skin sympathize with it. It sometimes becomes chronic; and we have known several young people liable several times in the year to returns of it, without any evident exciting cause.

1740. This disease, however, is much more frequently a sympathetic affection, and arising sometimes from difficult dentition, and at other times from some offensive substance taken into the stomach; this is especially the case with children, until the age of puberty. Acids of every kind seem capable of producing it—hence, the frequency of its appearance after crude fruit, cucumbers, young cabbage, lemonade when the body is heated, &c.

1741. The plan of treating this complaint is in conformity to the condition of the stomach; for whether this disease be idiopathic or symptomatic, the stomach is sure to possess great acidity—to destroy this, is essential both to its alleviation and cure. Magnesia, should, therefore, be freely prescribed; lime-water and milk should also be given, particularly when the eruption has continued several days. A milk diet should be adhered to; and if no fever be present, chicken water and beef tea may be indulged in.

1742. It is common in this disease to give saline purges; but this is decidedly injurious—there is no purgative so certain or proper as magnesia, or magnesia and rhubarb. It is also common to permit the patient to take lemonade; but this is still worse—plain water, or toast water not too cold, are the best drinks. Solid food should be avoided, as should damp places, or streams of cold air.

1743. To relieve the excessive itching, the patient should be liberally dusted with well toasted rye or wheat flour, and resist as much as possible the desire of scratching; instead of which,

* Though professedly treating of the diseases of children, we thought the case just related might not be uninteresting, notwithstanding it occurred in an adult.

let the part be well rubbed with a handful of flour, and much relief will be experienced.

1744. In the chronic form of this complaint, we have found a persevering use of small doses of Fowler's mineral solution, to have succeeded in every case in which we have hitherto tried it.

1745. A very interesting case of chronic urticaria is related by Cazenave. "In the Hospital of St. Louis, in a patient of Mr. Biett's wards, we have seen it accompanying a quotidian intermitting fever, and, after having lasted for four years, finally induce swellings and great distention, ecchymoses, ruptures and ulcerations. In many paroxysms it was accompanied with a general tumefaction, sometimes to such a degree that the patient was nearly suffocated; his respiration was hurried, the movement of the thorax very slight, the neck swelled, the face puffed up and of a violet colour, the pulsations of the heart intermitting, and, at times, scarcely perceptible; and death, which appeared imminent, only prevented by large bleedings. This patient, who had passed through several hospitals, and in which every means of cure had failed, was at last restored to health by the use of Fowler's solution."*

1746. We believe we were the first to recommend Fowler's solution, for the cure of chronic urticaria. Children of from seven to fourteen years old, many take four drops every morning, noon and evening, in sugar and water; or, should this sicken, give but three.

CHAPTER XXXVII.

OF BURNS.

1747. Accidents from fire, or hot water, are so frequent and so sudden in their occurrence, and so dangerous, oftentimes, in their consequences, that it becomes important that almost every one should have a knowledge of the modes of treating them.

1748. The extent of such accidents must necessarily be various; consequently, all cases of burns need not be treated precisely in the same manner. A burn may consist simply of inflammation; or it may be accompanied by vesications; or the mischief may be still greater, and the part may be killed.

* Pract. Syn. of Cut. Dis. Trans. p. 65.

1749. The great anxiety when this accident happens, is to know what should first be applied. Authors differ widely in their opinions upon this point; and opposite remedies in their turn are proposed, and had recourse to. We shall not enter into the disputes upon these points, but shall simply relate what we ourselves have found to answer best; and only name some of the other remedies, of which we have no experience.

1750. When a part is merely inflamed, we have found the steady application of cold wiskey, brandy, alcohol, and even water, not only relieve the immediate pain, but sometimes to quickly remove the inflammation, especially if it be not extensive. If the inflamed portion of skin be considerable, the same plan may be pursued; but the relief will not be so sudden, though it may eventually, be as certain. Wrapping the part in cotton is highly recommended, but we cannot speak of it from experience.

1751. If vesications attend, we almost always apply the spirit of turpentine a little warmed to the part, and protect it from the air as quickly as possible, if the wound be considerable; and, also, that the turpentine should not be applied to the sound skin. Should much pain attend, we give a suitable dose of laudanum. We almost always allow the first dressings to remain for twelve hours; and when we re-open the sore, we take care it shall not be exposed to a current of air, or a cold atmosphere. Our second dressing consists of the basilicon ointment, according to the recommendation of Dr. Physick.

1752. We are in the constant habit of opening the vesications by the point of a needle, before we apply the ointment. This kind of dressing is continued so long as the peculiar inflammation of a burn continues; or, as the common people express it, until the fire is out. Should the discharge now become too abundant, (a very common occurrence, especially if the surface be large,) we use the cerate of Turner, or the simple cerate, in which a quantity of prepared chalk is incorporated.

1753. Should the burn be deep, and of course the part killed, the basilicon is the best application until the parts begin to show signs of separation. But should the parts immediately round the injured part be much inflamed, we are in the constant habit of using the bread and milk poultice, until it subside. When the inflammation is reduced to a healthy degree, we return to the basilicon, or to the cerate, until the part slough out. After this

has taken place, we either use Turner's cerate, or the basilicon, or simple cerate, as the wound may seem to require. We use the first where the discharge is too abundant; the second, where it is deficient; and the third, where the suppurating process is going on kindly.

1754. In extensive burns, the patient almost always complains of a sensation of cold. When this is the case, a free dose of laudanum should be given, and he should be placed in an atmosphere of a moderate temperature. The wound should be opened only when necessary. Should much reaction take place, all stimulating substances, as liquor, animal food, or broths, should be withheld; and in some few instances, even bleeding and purging are necessary.

1755. The consequences to be apprehended, or, in other words, the prognosis of burns, are sometimes extremely difficult to pronounce—for they do not always endanger in proportion to their extent, yet they do so as a general rule.* We once saw death in a very few hours, follow a scald over the region of the stomach. The wound was not more than four inches square; the whole of the cuticle was removed in taking off the clothes. The child made no complaint; on the contrary, it soon fell into a sleep, from which it did not properly awake, before it died. A remarkable circumstance attended this wound; it appeared to heal over its whole extent, an hour or two before death.†

1756. Nor is the pain in proportion to the injured surface; on the contrary, small burns sometimes give more pain than large ones; owing, doubtless, to the more or less destruction of the vital principle in the parts affected. My friend Dr. Physick and myself, witnessed a remarkable case of this kind, in a young lad,

* "The unqualified statement that constitutional irritation is in proportion to the extent of surface destroyed, or the depth to which the destroying agent has penetrated, would be incorrect: such a statement would apply generally, if not universally, after the lapse of three or four days from the injury, or, in other words, to the after stages of the process; but it is unquestionable, that the situation of the injury is, as regards the first days, of greater importance—burns upon the neck, chest and abdomen, exclusively, proving oftener fatal by direct irritation."—*Travers on Constitutional Irritation*, p. 76.

† "Where the cutis is charred and killed, the constitutional sympathy is less than where the cuticle, ravelled up into folds like wetted paper, leaves the cutis bare; and for similar reason, vesications, however large or numerous, excite less irritation than the state last mentioned."—*Ibid.* p. 76.

who had fallen up to his chin into a soap-boiler's caldron. He was quickly taken out, but complained of no pain whatever. He died in a few hours after the accident.

1757. When burns become extremely painful soon after they are inflicted, we believe nothing affords such immediate relief as cold. This may be applied by means of a bladder nearly filled with water, and laid upon the part—it sometimes is useful to add ice to it; or ice may be applied over the dressings, agreeably to the recommendation of Sir James Earle.*

1758. Burns have almost always this peculiarity in healing; namely, they most rapidly shoot up fungus; nor is this easy to subdue, even by active caustics, which we are almost always obliged to use. There is little or no sensibility in this fungus: when it is abundant, we have often applied caustic to such surfaces, without the patient expressing the least uneasiness. When it is more moderate in quantity, it is generally more sensible.

1759. It may be proper to mention, that we have seen great error committed in the application of caustic, by its being spread over the whole fungous surface. This we believe, is never necessary; for the healing proceeds pretty constantly from the margins of the wound; consequently, it is only necessary to suppress its excess immediately at the edges. Dry lint, where compression can be easily made, is very useful in removing this superabundant product. But the lunar caustic is the least irritating, and most certain of all the escharotics we have employed, if we except the burnt alum. In a case where a large exposed surface was filled with a feeble jelly-like fungus, we sifted over its whole extent the burnt alum almost daily, with the most marked and prompt advantage. This application did not appear to give the slightest pain, though we had anticipated a very different result.

1760. When burns are healing, great pains should be taken that no two parts that are naturally separate, should come in contact, lest they adhere permanently. On this account, when the hands or feet are the seats of the accident, the fingers and toes should be kept separate, by well-regulated dressings. Splints and bandages may also be necessary to prevent coalescence, or contractions.

* See American Journal, of Medical Society, for August, 1833, for Mr. Holt's account of the use of Chloride of Soda, in burns, scalds, and black eyes.

CHAPTER XXXVIII.

OF PROLAPSUS ANI.

1761. This is a very troublesome complaint, where the habit of descending is of long standing. It always excites a great deal of solicitude for the event, though the disorder cannot be considered as dangerous.

1762. As the inner coat of the rectum is looser, and longer than the external, it is frequently made to descend, by whatever will excite a straining, or tenesmus—hence, the frequency of this accident after bowel complaints, especially dysentery. The worms called ascarides; (1634) a stone in the bladder; over purging; long-continued costiveness, &c., will sometimes produce this complaint.

1763. It will descend to various lengths; from half an inch to several inches; and will very often in the recent state of the disease, return of itself, for a time. But this is of but short duration; for repeated descents for a few days will generally confirm the complaint, and its falling will soon become habitual. When it is down, the child suffers considerable pain, especially if it be not soon returned; as the sphincter ani acts as a kind of ligature upon the prolapsed gut. If thus constricted, it soon swells, and inflames; and sometimes the stricture is so confirmed, as to prevent a free return of the venal blood of the part; in consequence of which, it soon becomes livid, or even black, and assumes an appearance really menacing.

1764. To prevent this, care should be taken that the gut be returned as quickly after its descent as may be possible; especially where it is from time to time threatened with this kind of strangulation. To ensure the return of the gut, after it has prolapsed, as soon as practicable, the mother should be instructed in the method of reducing it, that no time may be unnecessarily lost after its escape. The method of doing this is extremely simple, and equally easy in recent cases; but in the chronic affection, it is sometimes very difficult to accomplish.

1765. For the purpose of reducing the prolapsed bowel, the child must be laid across the lap, with its head a little lower than its hips. The part must then be lubricated by sweet oil, or fine hog's lard; a piece of fine linen may be laid over the part; then commence the attempt at restoring it, by making a gentle, but continued pressure in such direction as shall tend to return the gut within the sphincter ani. When you have diminished the distended part, by forcing a portion of blood from it by the pressure made by the fingers, the gut must be urged upward, and a little backward, until it retire within the verge of the anus.

1766. Sometimes this operation succeeds best, by placing the point of the fore-finger against a portion of the prolapsed gut, and carrying that portion immediately forward, until it pass the sphincter, or the constricting part. After this has passed, another and another portion is carried in the same manner, until all is restored. This method has never failed with us, when the prolapsed part has not been considerable; but it may not succeed when a large portion is down. In this case a steady pressure, as above directed, (1765) is the only one we know to be useful, for it requires some patience for the pressure so to reduce the swollen part, that it may repass the sphincter ani.

1767. Indeed, it sometimes becomes so enlarged by hanging down, that it would be in vain to attempt the replacement, until the bulk of the tumour was reduced by proper applications, and management. For this purpose the child should be kept in a horizontal position upon its back, with its knees drawn up, and the hips raised higher than the head. The part itself should remain exposed to the air,* but occasionally moistening it with lead-water of a proper strength; for on this much depends.†

1768. Dr. Underwood declares, (Vol. II. p. 54,) that "should such a case occur in children, as it frequently dose in adults, in which the bowel may not be easily returned, on account of supervening tumour and inflammation, the stricture will never fail

* If the weather be cold, the child should be protected by a sufficient quantity of covering, though the part itself should be left free.

† The following formula for the lead-water is the one we are in the habit of employing:—

℞. Sacch. Saturn.	℥i.
Aq. Font.	℥viij.
	f. Sol.—

to yield to an injection of cold water with a few drops of aq. lithargyri acetati,* with five or ten drops of the tinct. opii. An hour or two after such injection has been thrown up, the prolapsed intestine, though perfectly black as well as swollen, will be found to retire of itself."

1769. In cases, however, of prolapsus ani, the great object is to prevent a recurrence of its dropping—for this purpose, the plan of Dr. Physick is highly important, as we have more than once tested by experience. He directs, 1st, that the patient should live altogether upon rye mush sweetened with molasses, or brown sugar. By this diet the fæces become very soft, and, of course, can be readily expelled, without much effort of the child for this purpose; consequently, the risk of the gut coming out is diminished. 2dly, That the child should be made to pass its evacuations while standing; by this means the habit of straining is interrupted, and the bowel permitted to retain its situation.

1770. The child should sit upon a hard-bottomed chair without arms; and it should be of such a height, as not to allow the feet to touch the floor.

1771. It will be proper, however, to observe, that as this affection may have a number of causes, any attempt for its relief will be totally useless, until the complaint producing it be removed—therefore, in all such cases as do not depend merely upon habit, attention should be first directed to its remote cause.†

CHAPTER XXXIX.

OF THE WHITLOW.

1772. The extremities of the fingers are liable to a very painful inflammation, termed whitlow; which almost always termi-

* The following form may be used for this prescription, for a child from three to five years old:—

℞.	Sacch. Saturn.	gr. v.
	Tinct. Thebaic.	gut. x. vel xv.
	Aq. font. frig.	℥j.
		M. f. enem.

† See Amer. Journ. Med. Scien. for August, 1833, p. 530, for Dupuytren's method of treatment.

nates, in suppuration. It is commonly divided into four species, which, perhaps, merely differ in degree.

1773. The first species is the mildest; and locates itself at the side or root of the nail. In this species, the inflammation seems to penetrate no deeper than the true skin; and when it terminates in suppuration, the matter is confined immediately below the cuticle. Should the matter find its way beneath the nail, the patient has to endure a great deal of pain from its confinement in so unyielding a part.

1774. In the second species, the inflammation penetrates below the true skin, near the extremity of the finger. It creates much pain, especially in very young people; it eventually suppurates; but it requires a good deal of time before the matter discharges itself.

1775. In the third species, the inflammation is seated within the theca which covers the flexor tendons. When suppuration takes place in this species, the matter finds great difficulty in passing to the surface of the skin, in consequence of which, it is found to pass along the sheaths of tendons, sometimes even to the wrist.

1776. In the fourth species, the periosteum is the seat of the inflammation; and even the bone itself sometimes becomes inflamed. But in this case, the inflammation and suppuration are more limited than in the last species.

1777. In both the third and fourth species, the pain is extreme; and the inflammation sometimes runs so high, as to swell both the hand and arm. Much fever is sometimes excited; and we have known even delirium to attend.

1778. This disease is frequently produced by punctures, or other injuries of the like kind—we have known it several times produced by the sharp fin of a fish; and especially the cat-fish.

1779. The different species will require something different in the treatment. It rarely fails to suppurate; and we still more rarely have it in our power to prevent it. Several plans, however, have been proposed for this purpose; some of which are said to have been attended with success—such as holding the finger in very warm water, vinegar, or ley; poultices of the white of an egg and honey; of ley; of brown soap, &c.

1780. As this complaint almost always runs on to suppuration,

the sooner this is promoted the better; especially, in the two first species. For this purpose, we believe there is nothing better than the good, old-fashioned bread and milk poultice. This must be repeated every few hours, until the matter forms. When this happens, it should be discharged, by opening the abscess as soon as it becomes evident. The wound may be dressed with simple cerate.

1781. In the third and fourth species, much more trouble and pain are experienced. Blisters are said to have relieved this deep-seated inflammation: we believe this has happened, but it has been rarely. Much patience must be exercised, and suffering endured, before the matter in these cases will find its way to the surface; and sometimes much mischief is done the parts below and around it, before this happens. The bone and tendons are killed, and the usefulness of the hand is sometimes destroyed, by permitting this complaint to run its course.

1782. On this account, it is considered best to cut down to the part, in the direction of the finger, before suppuration has taken place, or as quickly after as possible; and not to wait for the tedious and painful operation of spontaneous opening. By this plan, immediate relief is always experienced; for if suppuration has not taken place, a wound which will quickly heal is substituted for an untoward inflammation, which would eventually terminate in it. If matter has formed, it will now be discharged, and the parts will readily heal, by very common attention—the wound may be poulticed for two or three days after the incision has been made, and then dressed with simple cerate. If the bone or tendon, has sustained injury, the progress of the cure will be very slow. Bone may exfoliate; or tendon slough. The portions of bone should be removed by forceps, when loose, and the protruding tendon cut off, as it may appear. If proud flesh shoot up through the external opening, it must be removed by caustic, or the opening enlarged.

CHAPTER XL.

OF DISCHARGES FROM THE VAGINA.

1783. We occasionally find, that very young children have a discharge from within the labia, of a thin acrid kind, or of a purulent appearance. When this occurs in very young subjects, it almost always proceeds from a neglect of cleanly attention to these parts; either by withholding a frequent use of lukewarm water, or permitting the child to remain too long wet. In either case, the difficulty is easily removed, by frequent washing, and the occasional use of weak lead-water. (See note to par. 1767.†)

1784. Children, however, more advanced in age, have also discharges of a purulent character, that seem to arise from a morbid action of the mucous membrane of the vagina or labia. This frequently shows itself about the fifth year, and may continue, if neglected, to almost any period. Parents, therefore, cannot be too much upon the alert, when this discharge is discovered on their children; nor too early in the application of suitable remedies for its removal. It is in a great measure owing to this neglect, that fluor albus, or whites, become so common, and of such difficult management, in adult age.

1785. If not interrupted in the beginning of its career, it is apt to continue until the period of puberty, over the phenomena of which, it but too often exerts an unfriendly influence.*

1786. The cure of this complaint must be attempted, by a strict attention to cleanliness; having the parts washed three or four times a day with warm water; and each of these washings to be followed by another, of warm lead-water. Should the parts be inflamed, or excoriated, they should be covered from time to time with very fresh lard. If the bowels be costive, small doses of magnesia should be given daily, so as to keep them a little free. Should they not be costive, or inclined to lax, the prepared chalk mixed with magnesia, or alone, according to either of these states, may be used. The diet should be strictly of milk: rice, or Indian mush, may be taken with the milk, or bread simply, if preferred.

* Treatise on the Diseases of Females, Chapter on Deranged Menstruation, by the author.

1787. Should these fail to interrupt the discharge, we must have recourse to some other remedies. The most certain that we have found, is the tincture of cantharides in proper doses.* But should a prejudice be entertained against it, or if it fail, small doses of the balsam copaiva may be given;† and a plaster of Burgundy pitch should be applied to the back, very low down. But care should be taken, that it is not allowed to remain long after it excites considerable itching; as it may produce too much irritation.

CHAPTER XLI.

OF SCURFINES OF THE HEAD.

1788. Children within the month, contract a dark-coloured scurf; especially from the top of the forehead to the back part of the head. It usually commences near the anterior fontanelle, or opening of the head, and gradually spreads itself, until it covers the whole crown. It acquires a considerable thickness, and will sometimes be thrown off in large flakes, or be frequently removed by rubbing, in consequence of its itching.

1789. At times this itching is so severe, as very much to interrupt the comfort of the child. The scurf is occasionally very offensive; its smell resembling that of sour curd. If the part be closely viewed, it will frequently be found covered with a vast number of small pustules, which, after awhile, pour out a thin acrid lymph; and this becoming dry, forms a crust. Upon the removal of the crust by any kind of violence, the skin underneath is often found inflamed. The removed crust, however, will quickly be replaced, by the exposed surface pouring out a quantity of fresh lymph, which quickly hardens into a new one.

* It is proper to begin with small doses of this medicine, say, five drops, every morning, noon, and evening, in a little sugar and water. After this quantity has been taken a few days, the dose may be increased a drop or two; and it may be thus augmented to ten or twelve drops, or even more, if necessary. But if any irritation of bladder show itself, it must be laid aside until it cease. Should it be required after this by a continuation of the discharge, it may be commenced again, and proceeded with, as just mentioned.

† From eight to ten drops of this balsam may be given three or four times a day, dropped on some brown sugar, and washed down by a little warm milk.

1790. The formation of this crust, is, for the most part, owing to neglect, and this neglect arises from prejudice; it being supposed by many, that it would be wrong to remove it; and thus it is permitted to accumulate, in unsightly and injurious quantities.

1791. As this complaint, (if it may be so termed in its commencement,) originates from a neglect of cleanliness, it should be removed after it has occurred, by suitable means; or be prevented by proper precautions. If it be neglected, this now in-offensive scurf may degenerate into a real disease, and require time for its removal. The proper plan of management, will consist, 1st, in its prevention; and, 2dly, in its cure after it has taken place.

1792. 1st, To prevent this, all that is necessary is to have the head of the child regularly washed every morning with water, or with a little fine soap and water; to have it well wiped and dried with a fine cloth; and then brushed with a brush, of sufficient stiffness to penetrate to the skin; and not to have the caps of the child of a too thick material.

1793. 2dly, After the incrustation is formed, it should be rubbed with sweet oil, or fine lard, at night, and washed off with a strong solution of borax and water—that is, in the proportion of an ounce of the borax to three half pints of boiling water.

1794. The borax water should be a little warmed, before the head is washed with it; and this repeated daily, until the scurf is removed. After the scurf is removed, the part should be washed daily for a few days with the solution of borax, which will effectually prevent its re-formation.

1795. Should, however, the skin beneath the scurf be inflamed or yield a purulent discharge, the parts should be rubbed once a day with the tar ointment, having first prepared the parts by washing, &c., as just directed.

1796. We have seen this scurf attempted to be removed, by simply washing and combing the head. We do not approve of this plan; as the fine comb, which is always employed, frequently produces so much irritation, as to increase the disease. A brush is the most proper instrument for this purpose, as just suggested.

A TRANSLATION

OF

THE PRESCRIPTIONS.

Page 292, par. 943.

Take, Of prepared calomel, 3 grains.
Loaf sugar, 6 grains.
Mix intimately, and divide into 12 parts.

Page 299, par. 975.

Take,	Prepared chalk,	2 drams.
	Laudanum,	20 drops.
	Oil of caraway,	1 drop.
	White sugar,	2 drams.
	Water,	1 ounce.
	—	Mix.

Page 308, par. 1004.

Take,	Calcined magnesia,	12 grains.
	Laudanum,	3 drops,
	Loaf sugar,	enough to make sweet.
	Water,	1 ounce.
	—	Mix.

Page 311, par. 1013.

Take,	Calcined magnesia,	20 grains.
	Tincture of asafoetida,	60 drops.
	Laudanum,	20 drops.
	Water,	1 ounce.
		Mix.

Page 313, note to par. 1016.

Take,	Sulphate of Quinine,	1½ grain.
	Loaf sugar,	1½ dram.
	Water,	1 ounce.
		Dissolve.

Page 317, par. 1032.

Take,	Prepared calomel,	4 grains.
	Calcined magnesia,	8 grains.
	Mix, and divide into 8 parts.	

Page 318, par. 1034.

Take, Acetate of zinc, 2 grains.
 Rose water, 2 ounces.
 Dissolve.

Page 319, par. 1039.

Take, Blue vitriol, 10 grains.
 Powdered (best) Peruvian }
 bark, 60 grains, or 1 dram.
 ———— Gum Arabic, ditto.
 Honey, ½ ounce.
 Water, 3 ounces.
 Dissolve and mix.

Page 336, par. 1108.

Take, Prepared colomel, 10 grains.
 ———— chalk, 20 grains.
 Mix, and divide into 20 parts.

Page 336, note to par. 1110.

Take, Prepared calomel, 2 drams.
 Essence of lemon, 20 drops.
 Common cerate, 1 ounce.
 Mix.

Page 408, par. 1378.

Take, Prepared chalk, 3 drams.
 Laudanum, 20 to 30 drops.
 Oil of cinnamon, 1 drop.
 White sugar, 2 drams.
 Water, 2 ounces.
 Mix.

Page 413, par. 1398.

Take, Prepared calomel, 3 grains.
 ———— chalk, 20 grains.
 Opium, half a grain.
 Mix, and divide in 12 parts.

Page 424, par. 1433.

Take, Prepared chalk or oyster-shells, 1 dram and a half.
 Powdered gum Arabic and }
 loaf sugar, each 1 dram.
 Laudanum, 10 drops.
 Water, 3 ounces.
 Mix.

Take, Same page and par.
 Salt of tartar, or soda, 30 grains.
 Gum Arabic and loaf sugar, each 1 dram.
 Tincture of opium, or laudanum, 10 drops.
 Water, 3 ounces.
 Mix.

Page 425, par. 1437.

Take, Copperas, 2 grains.
 Elixir of vitriol, 10 drops.
 Sugar, 1 dram.
 Water, 1 ounce.
 Mix.

Page 446, note to par. 1503.

Take, Tartar emetic, $1\frac{1}{2}$ dram.
 Oil of lavender, or essence of lemon, 15 drops.
 Simple cerate, 1 ounce.
 Mix.

Page 524, note to par. 1767.

Take, Sugar of lead, 1 scruple.
 Water, (soft,) 8 ounces.
 Make a solution.

Page 525, note to par. 1768.

Take, Sugar of lead, 5 grains.
 Laudanum, from 10 to 15 drops.
 Cold water, 1 ounce.
 Mix for an injection.

GLOSSARY,

EXPLAINING THE TECHNICAL TERMS USED.

Abscess, a collection of pus or matter.

Abdomen, the belly or paunch.

Abdominal viscera, the contents of the abdomen.

Abortion, miscarriage.

Anthelmintics, medicines against worms.

Antiphlogistic, such medicines as reduce an inflammatory habit.

Aphthæ, baby's sore mouth.

Artery, a strong, elastic circular tube, which carries the blood from the heart.

Axillary, belonging to the arm-pit.

Cardia, the upper, or left orifice of the stomach.

Catamenia, the monthly discharge of women.

Chyle, a white fluid produced by digestion.

Chyme, the first product of digestion, and from which the chyle is separated.

Clavicle, the collar bone.

Coagulum, a clot of blood, or of milk.

Colostrum, the first milk after delivery.

Colyrium, a wash for the eyes.

Combustion, burning.

Congenital, made or formed at birth.

Connate, born with.

Diaphragm, a muscle which separates the belly from the chest.

Dorsal, belonging to the back.

Duodenum, the first bowel below the stomach.

Dyspepsia, depraved digestion.

Enema, or *Enemata*, injection, or injections.

Excitability, the capacity to be acted upon by stimuli.

Excitement, the action produced by the application of stimuli.

Exfoliate, the act of casting off dead bone, or scales.

Farinaceous, mealy.

Fætal, belonging to a fœtus.

Fætus, a young animal before birth.

Gangrene, a mortification, or nearly the loss of life of a part.

Idiopathic, an original affection of a part.

Iliac Passion, dry belly-ache.

Leucorrhœa, the whites.

Liquor Amnii, the water surrounding the fœtus.

Lumbar, belonging to the loins.

Meconium, the fæces of a fœtus.

Miasm, sing. *Miasmata*, plur. any fume or effluvia capable of producing disease.

Nausea, sickness at stomach.

Nitrogen, one of the constituents of the atmospheric air.

Œsophagus, the gullet.

Ophthalmia, an inflammation of the eyes.

Ovum, an egg.

Oxygen, the basis of vital air.

Oxygenation, acquiring oxygen.

Pabulum, food.

Papula, a very small and accumulated elevation of the cuticle, with an inflamed base, very seldom containing a fluid, or suppurating, and commonly terminating in scurf.

Pectoral, belonging to the breast.

Physical, that which relates to natural agents—that which is opposed to moral.

Physiology, the doctrine which teaches the use and actions of living parts.

Placenta, the after birth.

Plethora, fulness of blood.

Pus, the matter found in abscesses, and other parts after inflammation.

Pustule, an elevation of the cuticle, with an inflamed base containing pus.

Rickets, a disease of the bones.

Rupture, a protrusion of any of the contents of the belly through the parietes of that cavity.

Sanguiferous system, the blood-vessels, both arteries and veins.

Scab, a hard substance, covering superficial ulcerations, and formed by a concretion of the fluid discharged from them.

Scirrhus, a tumour affecting glands.

Scrotum, the bag under the penis containing the testicles.

Scurf, small exfoliations of the cuticle, which occur after slight in-

inflammation of the skin, a new cuticle being formed underneath during the exfoliation.

Secretion, the separation of various fluids, and other matters by glands from the blood.

Stigma, a minute red speck in the skin, without any elevation of the skin.

Symptomatic, arising from, or indicative of some other affection.

Tenesmus, an ineffectual urging to go to stool.

Tormina, a griping pain.

Tubercle, a small, hard, superficial tumour, circumscribed and permanent, or suppurating partially.

Umbilicus, the navel.

Umbilical cord, the cord connecting the child with the mother.

Umbilical hernia, a protrusion of a bowel at the navel.

Uterus, the womb.

Utero-gestation, the term of pregnancy.

Vesicate, to blister.

Vesication, blistering.

Vesicle, a small orbicular elevation of the cuticle, containing lymph, which is sometimes clear and colourless, but often opaque, and whitish or pearl-coloured.

Weal, a rounded or longitudinal elevation of the cuticle, with a white summit, but not permanent; not containing a fluid, nor tending to suppuration.

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THE

CYCLOPEDIA

OF

PRACTICAL MEDICINE

AND

SURGERY,

A

DIGEST OF MEDICAL LITERATURE.

EDITED BY

ISAAC HAYS, M. D.

PART I.

CONTAINING

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Abbreviation	Do.	— and abscesses of }	Do.
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OF

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PROSPECTUS.

THIS work will present a digest of the existing state of knowledge in all the branches of the healing art; in special, regional, abnormal, and general anatomy; in physiology, pathology, therapeutics, materia medica, pharmacy, hygiene, surgery, obstetrics, legal medicine and medical police. The main object of medicine, the curing and preventing of diseases, and affording relief for injuries, will be kept steadily in view, and the development which each subject will receive, and the mode of treating it will, in a great degree, be determined by its importance in reference to practical medicine. Whatever is truly philosophical in medicine is also useful, although the application of the science to the art requires much reflection and sound judgment; it is therefore not intended to restrict the term practical medicine, as has sometimes been done, to the mere description of the symptoms of diseases, and an enumeration of the remedies employed in their treatment; such a restriction is derogatory to the dignity of medical science, and degrades it to a gross empiricism.

In the preparation of this work, free use will be made of the *Dictionnaire de Médecine et de Chirurgie Pratiques*, the *Dictionnaire de Médecine*, the *Cyclopædia of Practical Medicine*, *Copland's Dictionary of Practical Medicine*, and of the *Encyclopädisches Wörterbuch der medicinischen Wissenschaften*, all now in the course of publication; and besides embracing whatever is valuable in them, it will contain a very large amount of new matter, principally relative to *American* medical practice and surgery.

Numerous divisions will be avoided, as unfavourable to the practical character which it is desired that this work should possess, and that the facility of reference so important in a work of this kind, shall not thereby be impaired, a copious index will be appended to the last volume.

Full explanations will be given of all medical terms, especially of those which modern discoveries have introduced into the nomenclature of the science, and without a knowledge of which, many of the books of the present day are almost unintelligible.

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The highly respectable names on the list of collaborators, affords a sufficient guarantee for the ability with which the articles will be prepared. The editor has long been collecting materials for a work of this kind, and he possesses a larger collection of American medical works, than is to be found in any other library.

TERMS OF PUBLICATION.

The work will be published in parts *averaging* 112 pages each, illustrated with numerous wood cuts. It is expected that the work will be completed in forty parts, making eight large volumes. A part will be published every month if practicable.

Price to Subscribers 50 cents each part.

Gentlemen who are desirous to have the work forwarded to them, will please transmit their orders to the publishers, or to any of the Agents for the American Journal of the Medical Sciences, accompanied by a remittance of five dollars, which will pay for the first ten numbers.

In order that the postage on this work may not interfere with the extensive circulation, it is printed on a very large sized paper, so that no one part will contain more than five sheets of paper, thus making the postage within 100 miles, $7\frac{1}{2}$ cents; or over that distance, $12\frac{1}{2}$ cents.

We annex as a specimen a few pages of the work.

MM. CHEVALLIER, RICHARD, et GUILLEMAN, *Dict. des Drogues.*

Dr. GEIGER, *Handbuch der Pharmacie.*

GEO. B. WOOD.

ABIRRITATION. (From *ab*, priv. and *irritatio*, irritation.) This term has been employed by BROUSSAIS and his school, to denote a diminution of the vital phenomena in the different tissues. (See *Irritation*.)

BIBLIOGRAPHY.—CAIGNOU et QUEMONT. *Leçons du Docteur Broussais sur les Phlegmasies Gastriques.* Paris, 1823. p. 7.

BEGIN. *Principes Généraux de Physiologie Pathologique.* Paris, 1828. p. 126.

BROUSSAIS. *Principles of Physiological Medicine.* Trans. by Hays and Griffith, Philadelphia, 1832. pp. 28 & 29. I. H.

ABLACTATION. (From *ab*, priv. and *lacto*, I suckle.) The absence or cessation of lactation, (q. v.) This word, as originally employed by the Latin writers, was synonymous with our term *weaning*, (q. v.); but it has been restricted by some modern writers to this process as it relates to the mother. I. H.

ABLATION. (From *auferre*, to remove.) Formerly employed in a very extensive signification, and expressed the subtraction of whatever was in excess, in the body; the reduction of regimen; and the diminution of the mass of blood, by bleeding, &c. Its meaning has been much restricted by the moderns; and it is now principally used in surgery, as a generic term, expressive of all cases where a part is taken away. It includes two species, *Amputation* and *Extirpation*, (q. v.) I. H.

ABORTION. *Abortus*, *Aborsus*, *Afluxio*, Lat. *Ἀμβολισμός, ἐξαμβολισμός*, Hip. *Ἀποθόρα, ἐκπρωσμός*, Aristot. *Avortement*, Fr. *Aborto*, Ital. *Falche Geburt, Fehlgeburt*, Germ. *Miscarriage*, Eng. The premature expulsion of the contents of the uterus after conception.

ART. I. ABORTION. (*Obstetr.*) The contents of the uterus may be expelled, from the first few weeks after impregnation to the full period of utero-gestation. But the term *Abortion*, is usually confined to such cases of expulsion of the ovum, as happen before the fifth month; after this period, to near the full term, it is usual to call this accident by the name of *Premature Delivery*, (q. v.)

Causes.—Any thing capable of exciting uterine contraction to a certain degree, may be considered as a cause of abortion; these may be all mechanical violences; passions and emotions of the mind; sudden

alarm; drastic purgatives; almost all the exanthemata, especially small-pox and scarlatina; peculiar conditions of the uterus itself, or of its connexions with the vagina, as first made known to the public by Madame BOUVIN, though not first observed by her; syphilitic taint; a rheumatic condition of the uterus itself; local plethora; the death of the fœtus, &c.

Some of the causes just enumerated, for instance, mechanical violences, are perhaps the most common; such are blows, falls, slips, over-exertion, &c. The next in frequency, are passions and emotions of the mind, alarms, &c.; while the peculiar condition of the uterus, as regards its condition with the vagina, and other portions of the lower part of the pelvic cavity, and rheumatism, are the most rare—the former seldom or never occurring but with such women as have had many children, or such as have been maltreated during labour, or who have suffered numerous abortions; the latter, only, perhaps, taking place from premature exposure to cold after delivery or abortion.

There is much diversity in the influence of the causes of abortion, owing, most probably, to a more or less healthfulness of the uterus itself. In some instances, the slightest of the enumerated causes will be followed by unappeasable contractions of the uterus; while in others it requires that they should be applied with great force to produce similar consequences.

Where organic derangements of the uterus exist, abortion takes place with great uniformity at a certain period of utero-gestation. In such cases, the uterus will not suffer distension beyond a certain degree, without being excited to contraction; because its organization is so deranged, as not to permit of distension without causing uterine contractions. The same effect is pretty constantly observed in the rheumatic condition of this organ.

Local plethora, in many instances, becomes a cause of abortion: this is most frequently observed in women with whom abortion becomes a habit; hence the frequency of this accident in certain females, even to the amount of a dozen consecutive times. This act readily establishes itself as a habit, because each time it takes place the uterus becomes the more readily disposed to plethora. That the fœtus may become diseased and die in utero, even at an early period of gestation, is supported by many facts; and when this is constitutional, as it sometimes is, the woman suffers abortion as certainly as impregnation takes place.

It has just been stated, that uterine contraction is essential to the throwing off of the ovum; and that the remote causes all tend, with more or less certainty, to produce this effort of the uterus. If this be admitted, there will be but little difficulty in explaining the symptoms that attend this accident.

Symptoms.—It rarely happens that abortion, or the disposition of the uterus to cast off its contents, is not preceded by pretty uniform phenomena: as, more or less pain in the back and loins, with a sensation of bearing down; lassitude; depression of spirits; and a more than natural disposition to make water. These symptoms are generally sooner or later followed by a “show,” or a slight discharge of blood from the vagina, which will very soon, in some instances, amount to an hemorrhagy. Sometimes, and not very unfrequently, this “show” is the initial symptom; or, the aborting effort may commence by a sudden, and even an alarming discharge of blood; this especially happens to such as have had frequent repetitions of this accident.

The blood is expelled in coagula, or in a current, as the separation of the ovum is more or less extensive; or as the point of separation may be more or less remote from the os uteri; for a separation of the connecting medium of the ovum and uterus is a *sine qua non* to hemorrhage; at least, until after, perhaps, the sixth month. For up to this period, or nearly to this time, the ovum is almost entirely attached to the internal parietes of the uterus by the decidua and decidua reflexa, which subserves the offices of the placenta; but beyond this period, so much of the transparent portion (the membranes) of the ovum is formed, as to line a considerable part of the uterus; but from the detachment of which, no hemorrhage follows immediately, though eventually this separation may involve that of other portions, and thus produce a flooding of greater or less extent.

A flooding, however, is not a uniform attendant upon abortion; for the ovum is occasionally thrown off without this oftentimes alarming symptom; this, however, is confessedly rare, and perhaps only happens where no union was formed between the ovum and the uterine cavity.

Pain, like that of genuine labour, almost always accompanies abortion. At this we need not be surprised, as the action of the fundus and body of the uterus has to overcome the resistance of the neck of that organ, before the ovum can be expelled; and this is sometimes only accomplished by long-continued and frequently-repeated

uterine efforts, and these oftentimes of the most painful kind.

At other times, this act is effected with very little suffering, or with a trifling expenditure of blood. This is more frequently the case with women who abort habitually.

The mammæ frequently sympathize with the uterus during the progress of abortion, or previously to its commencement. In the first instance, they become painful and a little swelled, if the process be slow and not very painful; in the second, it happens from the loss of vitality of the embryo or foetus: when this takes place before any other symptom shows itself, it becomes the cause of uterine contraction; as the ovum now, from its loss of life, constitutes an extraneous body within the uterine cavity. These cases are rarely attended by as much pain, or by so great an expenditure of blood, as where abortion is suddenly produced by other causes, and where the ovum maintains its vitality perhaps to almost the last moment.

It is probable that the ovum has been deprived of its vitality in all such cases of abortion, as are attended, or preceded, by diarrhœa; and that those who have enumerated this condition of the bowels among the causes of abortion, have mistaken an effect for a cause; for however strongly the sympathy between the rectum and uterus may be insisted on, it must as confidently be declared, that it is reciprocal; and consequently, that the uterus, in such cases, may have been the original seat of irritation. This opinion is strengthened very often by the state of decay of the ovum at the time of its expulsion, but especially by the previous condition of the mammæ in such instances, as they are sure to have been tumid, and then to have become flaccid, before the escape of the ovum.

Sometimes, the first threatening of abortion is the sudden jet, or escape, of the liquor amnii. This, however, is rare, until after the sixth month, though it occasionally happens as soon as the second month. Uterine contraction and hemorrhage are sure to follow at no very distant period, and forbid success to any effort to prevent the expulsion of the other contents of the ovum.

The degree of hemorrhage is not always in the ratio of the advancement of gestation; though generally speaking, under similar circumstances it may be laid down to be the case; for the loss of blood, for the most part, is governed by the period of conception, the force of the remote cause, the degree or extent of detach-

ment, the vigor of the general circulation, the period that elapses before uterine contractions can be successful in the expulsion of the ovum, and the state of the ovum, that is, whether it remains entire, or has been forced open so as to expend the liquor amnii. Nor is pain always an attendant upon abortion, as many cases have occurred without it, though uterine contractions must take place.

Diagnosis.—The only complaint with which abortion can be confounded, is amenorrhœa when about to be relieved; but there is no very great difficulty in ascertaining the true nature of the pain and discharge of blood, especially in the married woman.

The married woman is rarely liable to suppression of the menses, without its having been preceded, by some pretty evident cause, as exposure to cold or wet, or some chronic disease, especially phthisis pulmonalis; or it may happen at that period of life at which the menses are preparing to take their final leave. When the first of these causes has produced the suppression, the married woman suspects herself to be pregnant, if she pass the common menstrual period, without bearing in mind at the moment, that she has exposed herself to any but the common or natural cause for this interruption. In these cases, nature very frequently overcomes the difficulty, after the obstruction has existed for two or three periods. The reappearance of the catamenia may now be mistaken for a threatening abortion; and the woman gives so effectually into the belief herself, that she immediately takes every precaution to prevent it.

In this case, for the most part, there has been none of the remote causes operating to produce abortion; though this would not with certainty betray the exact nature of the discharge, as abortion often takes place without any evident cause. The discharge, however, is not exactly alike in both instances. In abortion, we almost always have coagula expelled: not so, when it is merely the catamenial discharge. In abortion, the discharge is generally more suddenly abundant, and may be repeatedly arrested for a short time; whereas, in the menstrual evacuation, it is pretty uniformly continuous. Abortion is most frequently attended by alternate pains, which gradually augment, both in force and frequency: this rarely happens with the catamenia; for should the patient have pain, as in dysmenorrhœa, it gradually abates in its intensity, especially after the expulsion of a coagulum,

or of a membranous substance; and if the woman have been subject to this form of menstruation, there is much less reason to suspect pregnancy; and consequently, we may doubt that she is about to miscarry.

In pregnancy, other signs present themselves beside the mere arrest of the menstrual discharge: such is morning sickness, increase of the abdomen, enlargement and tenderness of the mammæ, &c.

But after the third month, an examination per vaginam will almost always dispel the doubt, should any exist, especially if the flooding be attended by pretty severe and long-continued pain. This examination should never be omitted in cases of doubt, or where the symptoms have been of long continuance, as it will not only lead to a knowledge of the true nature of the complaint, but will furnish important indications; for if the mouth of the uterus remain undisturbed, it will encourage attempts to preserve the ovum; but on the other hand, if it be distended, or open, it will declare the insufficiency of every attempt to save the ovum. The difficulty in distinguishing the two conditions of the uterus, will diminish in proportion to the supposed advancement of pregnancy.

Prognosis.—The prognosis in abortion, will always depend upon the extent of the hemorrhage that may attend the process; and consequently will not differ from any other extensive loss of blood from the uterus, or even from other portions of the body.

Treatment.—The treatment of abortion will necessarily divide itself into general and local; and the indications must be taken from the immediate condition and habits of the patient; and will consist of attempts to prevent or subdue uterine contraction, and abate hemorrhage.

As uterine contraction must necessarily precede hemorrhage, the endeavour should be to interrupt, or overcome, the action of the uterus as early as possible, by rest in a horizontal position, by blood-letting, by opiates, a strict antiphlogistic regimen, and certain astringents.

1. *Rest.* This is essential to the successful treatment of threatened abortion; therefore, when a pregnant woman is exposed to either of the remote causes enumerated above, and this of sufficient force to excite anxiety for the welfare of the patient, she should be immediately cautioned against every circumstance that may tend to aid the operation of this cause, and be ordered to her bed, that the system may become tranquillized by a supine posi-

tion and perfect rest. This, however, may not always be sufficient of itself to intercept or subdue uterine contraction; it may therefore require the abstraction of blood from the arm as early as may be judged expedient.

2. *Blood-letting.* It rarely happens that this remedy can be dispensed with in habits disposed to be plethoric, and is often of singular benefit in opposite temperaments, when arterial action is roused beyond the healthy bounds; the loss, therefore, of a few ounces of blood is absolutely necessary, when there is a painful aching in the back, a heaviness about the loins, a sense of weight or bearing down, even without pain, but *especially* when there is pain, and when there may be a "show" from the vagina. The loss of eight or ten ounces of blood from the arm, and a strictly antiphlogistic regimen, will not only tend to tranquillize the circulating system, but will prepare the way for the employment of opiates.

3. *Opiates.* Opium, in some form or other, is oftentimes of the highest consequence, and should never be omitted after the system is properly prepared for it by rest, and, if necessary, by blood-letting. Much judgment is, however, required for its exhibition, that it may not do injury. It should never be given when the pulse is highly excited, or when its operation is habitually unfriendly to the system. In the first instance, it should be preceded by rest and the loss of blood; in the second, the *Ext. Hyosciam.* may be substituted with much advantage. In such cases this remedy should be given in proper quantities to calm the system; and it must be repeated in sufficient doses, and at proper intervals, to overcome uterine contraction. It may be administered by the mouth; or by the rectum, in the form of injection, or suppository.

The use, however, of opium has its limit; for it must not be persevered in after it is ascertained that it would be neither useful nor practicable, to subdue uterine contraction; and this must be ascertained by an examination per vaginam, as recommended above, and if the os uteri be found open, or the neck distended, it would be hurtful to persevere with the opium; or when the mammæ have become suddenly flaccid, after having been distended and painful, it would be found equally useless; for in this instance, the embryo, or fœtus, has certainly lost its life, and it would be mischievous to interrupt pains, as it is by their agency alone that the lifeless ovum can be expelled; and the quicker this is

done, the better for the safety of the mother.

4. *Regimen.* It would, in many instances, be altogether unavailing to attempt preventing abortion by the means above suggested, if they were not aided by a proper diet. This is too commonly supposed to be a matter of no moment in the treatment of abortion; but this is an error of great magnitude, and it should not be lost sight of that it is so. None other than the blandest vegetable substances should be given, and these without any seasoning; therefore, every species of liquor, or even spices, should be prohibited, during the active, or commencing stage of abortion. Water, toast-water, barley-water, gum-water, or weak lemonade, should alone be given as drinks; and even these should be administered with a proper regard to the rest, or absence of motion, of the patient.


5. *Certain astringents.* The astringents most to be relied upon are the acetate of lead, the extract of rathany, and red rose-leaf tea. The acetate of lead may be given in doses of two to six grains, every hour or two, guarded by opium, as the hemorrhage may be more or less alarming. If it offend the stomach, it can be given per anum in form of an injection. Twenty grains of the acetate, sixty drops of laudanum, and two or three ounces of water, will be the proper proportions. Six or eight grains of the extract of rathany may be given every hour or two, drinking after it a wine-glass full of red rose-leaf tea, made as follows; half an ounce of the leaves must have a pint of boiling water poured on them and allowed to stand—strain off a wine-glass full, as wanted—it may be sweetened, if preferred. If there be pain when the rathany is exhibited, it will be proper to aid it by opium, as above directed.

Local treatment. This only becomes necessary when an hemorrhage is present; and as this will differ in degree, it will require remedies proportionate to its extent. These applications will consist of cold water, vinegar, or brandy; the tampon, and the crotchets.

The cold wet applications are placed upon the lower part of the abdomen and vulva—their coldness may be increased, if desirable, by the addition of ice. These appliances are oftentimes highly useful, but must not be carried too far—that is, to the prostration of the system; therefore, when the pulse becomes feeble, concentrated, and frequent, the cold remedies should be desisted from, and not repeated

until the system shows a disposition to react. During this time, the feet and legs should be kept warm by artificial means.

The tampon must be resorted to, as soon as the flooding becomes rather excessive—a piece of soft sponge of sufficient size is the best, and should be introduced into the vagina after lubricating it well with melted hog's lard; it should not remain longer within the vagina than twelve hours without being changed. It must not be crammed into the passage with such strictness as to obstruct the flow of the urine; and it should never be introduced into the neck of the uterus. This is certainly the most efficacious means of arresting this kind of hemorrhage; and its employment must not be too long delayed.



The crotchet consists of a piece of steel of the thickness of a small quill at its handle, and gradually tapered off to its other extremity which is bent to a hook of small size. (See accompanying figure, which represents the instrument one third the natural size.) This instrument is highly useful in cases in which the flooding continues after the ovum has been broken and its contents expelled. A portion of the involucrum sometimes insinuates itself into the neck of the uterus, and prevents the degree of contraction necessary to interrupt farther bleeding. This accident most frequently attends the earlier abortions. As hemorrhage is maintained by the cause just named, it suggests the propriety of never breaking the ovum; especially before the fourth month. When the flooding is maintained by this cause, it will not cease but upon the event of its removal. This condition of the placenta and neck of the uterus is easily ascertained by an examination; it will

readily be felt to be embraced by the neck of the uterus; and though a portion may protrude a little distance below the os tincæ, it cannot be extracted by the fingers; for the os uteri or cavity of the uterus will not be sufficiently large to permit the fingers to pass into it, that this mass may be removed; the crotchet should then be substituted; the mode of using it is as follows: The fore finger of the right hand is placed within or at the edge of the os tincæ; with the left we conduct the hooked extremity along this finger, until it is within the uterus; it is gently carried up to the fundus, and then slowly drawn downwards,

which makes its curved point fix in the placenta; when thus engaged, it is gradually withdrawn, and the placenta with it. In every case in which I have used it, the discharge has instantly ceased.

Prophylaxis. It has been noticed above, that aborting frequently becomes habitual—and when it is so, it has been found very frequently difficult to interrupt it, unless very rigid and exact means be employed. The following plan will almost always succeed, if regularly pursued.

1st. The patient must be confined to her bed, or preferably to a mattress, as quickly as practicable after she overruns a menstrual period. On this she must content herself to remain, almost without motion; but certainly without exertion.

2d. She must lose, by leeches or cupping, about four or five ounces of blood, from the inner side of the thigh, four or five inches above the knee, the week previously to the next menstrual period; and this operation must be repeated, again and again, at the respective periods—or in other words, every four weeks.

3d. The bowels should be kept well regulated, by medicine of the mildest kind, as castor oil, magnesia, Seidlitz powders, &c., but purging must be avoided.

4th. She must be kept as strictly upon a milk and vegetable diet, as the condition of the stomach will permit.

5th. Sexual intercourse should be strictly prohibited.

6th. This plan must be persevered in for at least two months after the period at which the patient was usually wont to miscarry.

7th. Blisters to the abdomen or sacrum have occasionally been found useful in interrupting the aborting habit. They are, however, not only inconvenient, but sometimes very troublesome, without proving effectual; they should therefore be looked upon as a dernier resource. We recommended their use more than twenty years ago. (See Amer. Edit. of *Rees's Cyclop. Art. Abortion.*) They have since been recommended by Dr. JACKSON, of Northumberland, and others. (See *Bibliography* to this article.) We have not, however, had recourse to them for some years past, for the reasons above stated, and from having found, in a great number of cases, the plan just laid down, to be attended with the most entire success.

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I. H.

ABORTION. (Medico-legal.) When judicial investigations are instituted in cases of real or suspected abortion, the principal points on which the medical witness will be examined, are, 1st. Has abortion really taken place? 2d. if so, was it the effect of natural causes, or was it artificially and intentionally produced?

1. *Has abortion really taken place?*—This is to be ascertained by a careful examination of the product of the premature labour, and of the female who is said to have aborted; and the chain of evidence will necessarily be defective if either of these examinations be neglected.

Examination of the embryo. To render this satisfactory, the changes that the embryo undergoes from the period of conception to the end of the ninth month, must be borne in mind. During the first weeks, the embryo being exceedingly small, may be confounded with a mole, a coagulum of blood, &c. The substances which are said to have been expelled from the womb must therefore be carefully examined, by being washed in clear water, taking care not to injure them by compression or otherwise. If they be composed of a coagulum only, this will be dissolved for the most part, leaving only the fibrine. If the expelled substance be a mole, it may be recognized by its solid consistence and other peculiar characters. (See *Mole*.) But if a fœtus be present, it will present certain signs of organization which are more or less striking, according to the age of the embryo.

Until the fifteenth day after conception, the uterus contains only the rudiments of the ovum, no part of the future embryo being distinguishable. At this period, however, MECKEL states that the ovum is six or eight lines in diameter, containing an embryo whose form has not unaptly been compared to that of a tadpole, and about three to four lines in length. At the end of the first month, the thorax and abdomen begin to appear in the form of round tubercles. At two months, the head is as large as half the body, the spine is formed, and the various parts of the face begin to be visible, whilst the extremities, although imperfectly formed, are readily distinguish-

able; and about the thirteenth week the sex may be determined. The embryo is now about two inches in length, and weighs rather more than an ounce.

After this, no mistake can or ought to be made by the most inexperienced obstetrician. At the seventh month, the infant being so fully formed as to be capable, with certain precautions, of enjoying an independent existence, any questions that may arise belong rather to infanticide (q. v.) than to abortion.

Examination of the woman. After having ascertained that the product examined was an embryo, and at what term of utero-gestation it had been expelled, the next point to be determined is the state of the mother; and the value of this examination depends in a great measure on its being made at an early period, as well as on the period of utero-gestation, at which the abortion has taken place. Actual inspection is of little use where more than a week has elapsed, as in that time the parts have so far regained their natural condition as to embarrass or even baffle inquiry. The period which has elapsed from conception has also much influence, as the derangement of the parts consequent on the expulsion of the fœtus, will, in most cases, be in a direct ratio to its age. But in every instance, if the abortion has occurred some time previous to the examination, and the woman has recovered, the fact must be proved by circumstantial evidence; and the fact of the expulsion of the embryo, can only be inferred, from pregnancy having existed. It should also be borne in mind, that the expulsion of moles, hydatids, &c., may induce the same appearance of the parts, as the passage of a fœtus through them. It is therefore evident, that no legitimate deduction can be drawn from the phenomena presented by the woman, however strong the presumption may be, without a concurrence of the following circumstances.

1. A certainty of the previous pregnancy, and comparison between the development of the fœtus and the period of utero-gestation at which the abortion was said to have taken place.
- 2d. Such an advanced stage of pregnancy, as to produce, with the effects of the labour, certain well-known changes in the uterus and vagina.
3. Finally, the examination having been made soon after the presumed abortion took place.

2. *Was the abortion the effect of natural causes, or was it artificially produced?* In ascertaining this, concomitant or collateral circumstances should be allowed much

weight; as concealment of the pregnancy, and an application for medical aid without an acknowledgment of its existence; the purchase and use of reputed abortives, &c.: and, on the other hand, of resort to professional assistance when miscarriage was expected, and the fact of the occurrence of any event capable of producing premature labour.

As the natural causes which may induce abortion have been already fully explained, it is unnecessary to advert to them in this place. The methods employed in order to excite the expulsion of the embryo, may be referred to two general heads; those which act through the general system of the parent, and those which are applied immediately to the uterus and its appendages. To the first class belong emetics, cathartics, and emmenagogues; and to the latter, the application of leeches to the vulva, and mechanical violence.

With regard to the first class, it should be remembered, that certain drugs are generally supposed to be endowed with the power of causing the expulsion of a fœtus, and although it is now generally admitted by practitioners that there are no abortives strictly speaking, the circumstance of the purchase and administration of one or more of these articles ought to be allowed an important bearing on the case. There is no doubt, however, that emetics, purgatives, &c., are capable of producing abortion, particularly in females predisposed to it; but there is no one article, the result of whose internal administration, is abortion and nothing but abortion; the life of the mother is always endangered. There is no drug, says Dr. MALE, which will produce miscarriage in women who are not predisposed to it, without acting violently on their system, and probably endangering their lives; and in this opinion he is upheld by almost every medical authority of any note.

The abortive means which act directly on the womb and its appendages or contents, are much more certain in their effects, but at the same time are more dangerous to the female. They consist in the application of mechanical irritation to the uterus and its contents, by the actual introduction of some instrument, the injection of acrid substances into the vagina, or the employment of such external violence as will irritate or injure the uterus. As respects bleeding from the foot, and the application of leeches to the vulva, though sometimes resorted to for the purpose of producing abortion, they seldom or never will cause this phenomenon, without be-

ing pushed so far as to reduce the female to a dangerous state of debility; in fact, when used moderately, they will in certain cases avert this event.

When a physician, or practitioner of midwifery, is called upon as a witness in cases of suspected abortion, his duty is to verify the fact of the abortion having taken place; and, when he has satisfied himself that this was the case, to inquire into all the circumstances which preceded, accompanied, and followed this event: thus he is to examine whether it might not have been induced by natural or accidental causes; what was the term of utero-gestation; if, from the existence of some concomitant disease, the woman had freely employed reputed abortives; and, in short, to make every inquiry that may tend to elucidate the real cause of the event. On the other hand, it is also his duty to the laws, scrupulously to weigh every circumstance which may tend to show that the abortion was premeditated on the part of the female or others. Hence, he is to ascertain whether the pregnancy was concealed, whether reputed abortive drugs were administered, whether she was solicitous to learn how abortion could be produced, &c. The fœtus and its envelopes should also be carefully examined, to discover whether they bear any marks of an instrument having been used; and in case of the death of the woman, a careful inspection of the uterus and its appendages should be made, with the same intent.

Laws in relation to abortion. The legislative enactments in the United States, respecting abortion, differ greatly from each other, whilst in some, the common law of England, as it stood at the Declaration of Independence, is still the rule of action. The English law, as stated by Blackstone, is: "If a woman is quick with child, and by a potion or otherwise killeth it in her womb, or if any one beat her, whereby the child dieth in her body, and she is delivered of a dead child, this, though not murder, was by the ancient law, homicide. But the modern law doth not look upon this offence in quite so atrocious a light, but merely as a heinous misdemeanour." This, being common law, is therefore in force in such of the United States as have no special legislative enactment on the subject. The law of England now in force under the act of 1803, being statute and not common law, has no force here.

By the revised statutes of New-York, "Every person who shall wilfully administer to any pregnant woman, any medi-

cine, drug, substance, or thing, whatever; or shall use or employ any instrument or means whatever, with intent thereby to procure the miscarriage of any such woman, unless the same shall be necessary to preserve the life of such woman, or shall have been advised by two physicians to be necessary for that purpose;" shall, upon conviction, be punished by imprisonment or fine, or both.

The law in Louisiana is very full and explicit, condemning any person who procures or is privy to the procurement of abortion, to imprisonment, unless it is procured by medical advice for the purpose of saving the life of the mother. If death ensues from attempts to procure unlawful abortion, it is murder.

In Connecticut, it is imprisonment for life, or such other less term as the court may award. It is evident that where express provision to the contrary has not been made, the medical practitioner is placed in a disagreeable predicament: To save the life of the mother he is often called upon to produce abortion, and yet in all these cases he is criminal in the eye of the law, strictly speaking. At the same time, it is highly improbable that such cases will ever become the subject of judicial investigation; but still, whilst the law thus views him in the light of a felon, no obstetrician should rely on his own judgment alone, in cases thus involving the necessity of the destruction of the fœtus, and the possibility of a fatal result to the mother.

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ABORTIVES. This term has been applied to a class of remedies which were supposed to act in a special manner on the gravid uterus, causing an expulsion of its contents. The whole of them, with the exception, perhaps, of Ergot, act by their

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